Bulletin of the
MEDICAL LIBRARY ASSOCIATION

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INSTITUTE FOR MEDICAL LIBRARIANS

Conducted by
HERMAN H. HENKLE, *Director*
School of Library Science
Simmons College

A SYMPOSIUM ON MEDICAL LITERATURE*

Introduction

NO ASPECT of the librarian's work presents greater difficulty than the task of keeping informed about the constant stream of publications flowing into the library, and probably not even the student of a particular field is in greater need of guides to subject literature than the librarian. The absence of a guide to medical literature, comparable to the work done by Crane and Patterson† for chemistry, led to the decision to plan for this Institute a Symposium on Medical Literature. It was obviously impossible to plan, for presentation in two sessions, a program which would represent a comprehensive survey, but the papers which follow may serve as acceptable substitutes for several of the chapters in some future more complete *Guide*.

Numerous short studies and discussions of medical literature, especially medical periodicals, have already appeared in scattered publications. It is to be hoped that some medical bibliographer will use this material for the nucleus of a larger and more comprehensive introduction to the literature. The paper in this symposium by Mrs. Cunningham, on "Reference Works in Medicine," calls attention especially to the need for a "comprehensive outline of medical reference works," pointing out that general guides to reference books describe relatively few of the reference materials of interest to the medical librarian. Certainly not the least value

* Held at the Fortieth Annual Meeting of the Medical Library Association, Boston, June 29, 1938.

† Crane, E. J., and Patterson, A. M. *Guide to the Literature of Chemistry.* New York, Wiley; London, Chapman, 1927.

of such a survey would be to indicate the lacunae, serving no doubt as a stimulus to preparation of much needed reference aids.

Medical bibliography is a fascinating field of study, and, as pointed out by Dr. Viets in the first paper in this symposium, "one of astounding proportions." Dr. Viets has confined his attention to general medical bibliography, but he has succeeded in presenting a most useful summary of its historical development. Unfortunately many of the items he describes are not generally available for study, but the rapidly developing field of microphotography will undoubtedly remedy this as soon as the method comes into wider use in medical libraries.

An ultimate need of every specialist is the bibliography of his own field. This aspect of medical bibliography is signally represented in the symposium by Dr. Fulton's, "A Projected *Bibliographia Physiologica.*" The scholar in any field must, in a very real sense, prepare his own bibliography. Even though a critical bibliography of his subject may have been published, he must make the information a part of his own knowledge, and continually supplement the published bibliography with additions of current material and possibly emendations to meet the needs of his specialized interests. Dr. Fulton's paper will prove interesting to all such "bibliographers," regardless of their subject interests.

A comprehensive guide to medical literature, from the standpoint of the librarian's need, should point out and evaluate not only the bibliographical sources and reference aids, but also textbooks, periodicals, government documents, and reprints, as forms of publications. The papers by Miss Anderson and Mr. Henkle are contributions of this kind.

An important problem which received no consideration in the symposium is that of sources of publications—important commercial publishers of scientific books, and an evaluation of university presses, scientific societies, and other organizations as publishing agencies of medical literature.

Of primary interest as background to the whole study of medical literature is the history of medicine. Dr. Sanford V. Larkey, *Librarian, Welch Medical Library, Johns Hopkins University,* contributed a most interesting talk on some of the less well known works in the history of medicine, and it is regretted that no manuscript was submitted for publication.

Mr. Ballard prepared an extensive exhibit of manuscripts and books from the Boston Medical Library. His notes and a list of the books add to the value of the printed record of the symposium.

While this symposium touches but briefly upon a few aspects of the broad field of medical literature, the papers are presented with confidence that they will prove useful to medical librarians, and at least in part to the medical students, who read them.

THE BIBLIOGRAPHY OF MEDICINE*

By Henry R. Viets, M.D.
Librarian, Boston Medical Library

The topic of medical bibliography is one of astounding proportions. In the *Index-Catalogue* it is divided into the following sub-headings: general, catalogues of public libraries, catalogues of private libraries, booksellers' catalogues, bibliographies of countries and localities, dissertations and theses, indexes and manuscripts. In this short historical introduction, however, I can only deal with general medical bibliography and must leave out much of the fascinating side of medical bibliography for another occasion. What is more interesting and instructive, alas, than catalogues of private libraries—for instance, the *Bibliotheca Osleriana,* booksellers' lists, or the bibliography of an individual, such as those so successfully issued in recent years by Keynes, Fulton, Miss Doe and others.

Bibliography, "the systematic description and history of books, the authorship, printing, publication, editions, etc.," as defined by the Oxford English Dictionary, has not, by any means, been neglected in the field of medicine. As I shall show, scholarly and astounding devotion to the subject has been evidenced by many physicians and medical librarians. To these men we pay tribute today in passing their precious volumes through our hands, the result of so much indefatigable labor. Only the bibliographer appreciates the hours of toil that go into the simplest well-done hand-list; to visualize the work of a Haller, a Ploucquet, or a Callisen stretches our pia mater to its utmost limits.

One of the first general printed bibliographies was written by the abbot of Spanheim, Johann Tritheim, a remarkable ecclesiastical scholar. Although primarily interested in manuscripts, of which he had a magnificent collection, Tritheim used the printed book to describe his library of works written by the Church Fathers. In his *De scriptoribus ecclesiasticis,*[1] a fine incunable printed in Basel in 1494, will be found the works of many men who have influenced medical thought during the Renaissance, such as, for instance, Nicolaus de Cusa. Tritheim's *Cathalogus illustrium virorum,*[2] 1495, published in Mainz, is a more selected list. The works of Tritheim form a fitting introduction to medical bibliography and he holds a high place among bibliographers because of his sound and scholarly notes.

* Read at a symposium on Medical Literature at the Fortieth Annual Meeting of the Medical Library Association, Boston, June 29, 1938.

¶ Symphorianus champerius lugdunenſ. Bondiſaluo toledo electo regio lugdunenſi. gallorum regine medico artiuz liberalium medicineqz profeſſori bene merito. S. P. D.

Cogitanti mihi iã pridem: cui nã potiſſimũ libellũ meum: quẽ de claris medicis ſcriptoribuſqz artis medice omnibus conſcripſerã eſſem dicaturus: vnus imprimis occurriſti: cuius nomini cum qualiſcunqz eſſet: quo rutius vulgaretur deſtinarez: Necz eñ abſqz patrocinio In publicũ prodire debuit liber: qui mereri eternitatẽ vellet. Qua propter cũ nemo q̃ tu huic rei magis ydoneus viſus eſſet. Qui hmõi lucubratione delectaret. Ad te potiſſimũ confugi hac epiſtola huiꝰ operis cenſorẽ te conſtituens. Eteñ ſi quid incõcinnum. Ineruditũqz offenderis: hoc meo imbecilli ſtudio attribues. Non enim he vires mee ſunt vt audeã mihi (niſi te auſpice) eternitatis nomen vendicare. Accipies igiꝰ leta frõte hũc libellum meũ de claris medicis: ſcriptoribuſqz

a

SYMPHORIEN CHAMPIER, DE MEDICINE CLARIS SCRIPTORIBUS, LYONS, 1506
(Courtesy of the Boston Medical Library)

Although Tritheim's two volumes contain the names of men of interest to us, a more strictly medical bibliography was by Marsilio Ficino,[3] the Florentine physician, who published a catalogue of his own writings in 1493. This little book, *De sole et lumine,* contains many references to other writers, but is principally a personal bibliography.

The first medical bibliography[3a] was written by Symphorien Champier, *De medicine claris scriptorbus,* published at Lyons in 1506, as part of collection of works entitled, *Index librorum in hoc volumnie contentorum.* The book, a subject bibliography, is divided into five parts: ancient medical writers, philosophers who wrote on medicine, the ecclesiastical writers, Italian medical authors and lastly, French, Spanish, German and English ones. References to writing are given irregularly although the recent literature is fairly well covered. The work appears to be incidental to the more important endeavours of Champier and there is no indication that it stimulated others to work along similar lines.

With the exception of the *Medicorum per alphabetum nomenclatura* of Andreas Tiraquell, published in his *De nobilitate,* 1571, and possibly some others, it was not until 1590 that medical bibliography was covered in a systematic manner. Pascal Lecoq (Paschalis Gallus) (1567-1631), however, had a wider vision than his predecessors and his compact small volume, *Bibliotheca medica,*[4] issued at Basel in 1590, listed the works of twelve hundred and twenty-four authors writing in Latin, arranged alphabetically by their given names. The work is incomplete; under Ambrosius Pareus, for instance, only the Paris *Opera,* 1582, and the Basel, *De hominis generatione,* 1586, of the Latin works are listed. One French collected edition is given, the Paris, 1579. In addition, books are classified under sub-titles as: books in French; books in German and books on Hippocrates, Galen, Avicenna, Dioscorides; surgery, anatomy, herbs, pharmacy, practice, the *consilia medica* and on pest and lues. This latter part of the book is of value, particularly the bibliographies on the plague and on venereal disease, in spite of the fact that in many instances only the author's name is given.

Lecoq drew heavily on his predecessors, particularly on the monumental *Bibliotheca universalis,*[5] compiled by Conrad Gesner and published at Zurich, 1545, 1548, 1549, 1555, in four large volumes. Gesner was only twenty-nine years of age when the first volume was published and, as Osler says, "it is astonishing that one man, with little help, could have completed so extensive a work, requiring great research, in less than eight years; a work which, in spite of unavoidable mistakes, contains much detailed, and as a rule correct, information."[6] Book XX, the medical section, was unfortunately never published. The *Bibliotheca universalis* was so popular that abridgements were soon issued. The first, by Lycosthenes, 1551, and the second, by Simler, 1555, were both used

BIBLIOTHECA MEDICA

Siue

CATALOGVS ILLORum, qui ex professo ARTEM MEDICAM in hunc vsque annum scriptis illustrârunt:

Nempe

QVID SCRIPSERINT, VBI, qua formâ, quóve tempore SCRIPTA *excusa, aut* MANVSCRIPTA *habeantur.*

Admiscentur obiter nonnulla scitu non indigna.

Collegit in vsum Medicorum & auxit

PASCHALIS GALLVS
Picto Villefanensis.

Quid adiectum sit, versa pagina docet.

BASILEÆ
Per CONRADVM VVALDKIRCH.
cIↃ IↃ x c.

PASCAL LECOQ. BIBLIOTHECA MEDICA,
BASEL, 1590
(Courtesy of the Boston Medical Library)

by Lecoq. The fourth volume of Gesner's great work, *Appendix bibliothecae Conradi Gesneri,* 1555, contains both of these abridgements.

Although the *Bibliotheca medica* of Lecoq is incomplete, we can rightfully consider it the corner-stone of medical bibliography. We know little of Pascal Lecoq, who usually called himself Paschalis Gallus. He was born in 1567 in Poitou and received his doctor's degree from Poitiers in 1597. He lived in Poitiers and died there in 1651 at the age of sixty-four. His slender book, published at the age of twenty-three and probably written with his fellow students in mind, was of value at the time as an inexpensive abstract of the medical authors in Gesner's four large volumes.

Lecoq's work was followed the next year by the *Nomenclator scriptorum medicorum,*[7] by Israel Spach (1560-1610), professor of medicine at Strassburg. His book was published in Frankfort in 1591, as was a similar work by Johann Georg Schenck, *Biblia iatrica,*[8] in 1609. Spach's volume is not so important as Lecoq's. As a subject list, it is very incomplete. Schenck (-1620), a physician, was the son of a famous father, Johann Schenck von Grafenberg (1530-1598), the author of a remarkable volume, *Observationum medicarum, rararum, novarum, admirabilium, et monstrosarum,* Frankfort, 1600, 2 ed., edited by his son.

A more complete work, and one still of value today in searching for obscure references, *De scriptis medicis,*[9] was compiled by Johannes Antonides van der Linden (1609-1664), the professor of the practice of medicine at Leyden, and published in Amsterdam in 1637. Second and third editions were issued in 1651 and 1662 respectively. The usual reference edition of this book is the *Lindenius renovatus,*[10] 1686, a continuation and amplification of Linden's *Scriptis medicis,* by Georg Abraham Mercklin of Nürnberg. Linden listed the authors alphabetically by given name in over 600 pages, followed by a subject listing and a complete index of last names, with reference to given name. Brief biographies of some authors are added in Mercklin's edition. His book was much more complete than any work published before his time and yet, when compared with modern standards, seems strikingly imperfect. For example, in the third edition, 1662, under Hieronymus Fracastorius,[11] only two editions of *Syphilis sive morbus gallius* are noted: Basel, 1536 and Antwerp, 1562, omitting mention of the first (1530) and all other editions published before 1662. Incidentally he dates the Basel edition as 1636 instead of 1536, an obvious misprint, and this error is carried forward by Mercklin in his *Lindenius renovatus.* Although improvement was taking place in medical bibliography, Linden and Mercklin were far from the standard set by the compilers of the eighteenth century, notably Manget and Haller.

Linden was born in 1609, at Euckhuysen in Holland, where his

IOANNIS ANTONIDES
VANDER LINDEN

DE SCRIPTIS MEDICIS

Libri duo.

Quibus præmittitur

AD

D. PETRVM TVLPIVM

Manuductio ad Medicinam.

AMSTELREDAMI,
Apud IOHANNEM BLAEV,
cIↃ IↃC XXXVII.

JOHANNES ANTONIDES VAN DER LINDEN, DE SCRIPTIS MEDICIS, AMSTERDAM, 1637
(Courtesy of the Boston Medical Library)

father practised medicine and was director of the college. After studying in Leyden, he took his doctor's degree in Franeker in 1630. After a period of practice in Amsterdam he was called to the chair of medicine at Leyden in 1651, a position which he held until his death in 1664. *De scriptis medicis* was published during his Amsterdam days, the second edition in the year he went to Leyden. Haller's admiration for Linden's work is worth quoting: "neque ego unquam hanc bibliothecam tolerabilem perfecissem, nisi a Lindenio adjustus fuissem."[12] Linden also edited a Hippocrates *Opera omnia,* 1665.

Two more names in the seventeenth century are worthy of brief mention. Cornelius à Beughem[13] published his *Bibliographia medica et physica novissima* in Amsterdam, 1681. It consists of an authors-index by last names, covering Greek, Latin, French, Spanish, Italian, English, German and Dutch writers who issued books from 1651 to 1681 only. Lynn Thorndike[14] collated the items under topical headings, showing what subjects were discussed most frequently during this period of three decades. Beughem was librarian at Emmerich, on the border between Holland and Germany. He is said to have cut out work enough for ten men and perhaps that explains why Jourdan, in "Panckoucke," found him, "trés médiocre, fort incomplète, et remplie d'erreurs."[15] A second bibliography of the time was the beautifully printed work by Martin Lipen,[16] *Bibliotheca realis medica,* 1679. This was a subject list.

Martin Lipen (1630-1692), a graduate of Wittemburg in 1655 but not a physician, was born in Brandenburg in 1630. He was rector at Lübec from 1676 until his death in 1692. In addition to the *Medica* he published bibliographies of law (1679), philosophy (1682) and theology (1685).

The early eighteenth century saw the beginnings of more systematic and extended medical bibliography in the numerous works of Jean-Jaques Manget (1652-1742) of Geneva. Various bibliographical works of lesser importance culminated in his four volume *Bibliotheca scriptorum medicorum,*[17] 1731, not, however, a book of very solid value. Manget, born in Geneva but receiving his doctor's degree from Valence in 1678, was a close friend of the medical historian, Daniel Le Clerc. Both men, born the same year and going to the same university, exerted a wide influence on medicine in Geneva.[18] A sounder two-volume work, by subjects, was published by Christian Wilhelm Kestner (1694-1747)[19], *Bibliotheca medica,* 1746.

Both Manget and Kestner were completely overshadowed by the publications of Albrecht von Haller (1708-1777), who may rightfully be called the real father of medical and scientific bibliography. Haller's bibliographical publications consist of the *Bibliotheca botanica,* two volumes, 1771, 1772, large quartos of 654 and 785 pages;* the *Biblio-*

* Bay, J. C. *Bibliotheca botanica, index emendatus.* Bern, 1908.

LINDENIUS RENOVATUS,
SIVE,
JOHANNIS ANTONIDÆ van der LINDEN
DE
SCRIPTIS MEDICIS
LIBRI DUO:

QUORUM PRIOR, OMNIUM, TAM Veterum, quàm Recentiorum, Latino idiomate, typis unquam expressorum Scriptorum Medicorum, consummatissimum Catalogum continet; quo indicatur, quid singuli Authores scripserint: nec non ubi, quâ formâ, & quo tempore, omnes eorum Scriptorum Editiones excusæ prostent:

Posterior verò Cynosuram Medicam, sive, Rerum & Materiarum Indicem, omnium Titulorum vel Thematum Medicorum potiorum Loca Communia Alphabetico hâcque novâ demum Editione primùm adornato ordine suis locis ita comprehendentem exhibet, ut inquirenti, quicquid desideraverit, velut digito, in multiplicem usum, clarissimè monstretur:

NOVITER PRÆTER HÆC ADDITA PLURIMORUM AUTHORUM, quotquot nempe habere licuit, Vitæ Curriculorum succinctâ Descriptione:

Adscitâ undique, ab exteris Medicis subsidiariâ ope, propriâque ultra decennium adhibitâ singulari operâ atque curâ à postremâ Editionis Anno M. DC. LXII. usque ad præsentem

Continuati, dimidio penè amplificati, per plurimùm interpolati, & ab extantioribus mendis purgati

à

GEORGIO ABRAHAMO MERCKLINO, D.
Reipubl. Norimberg. Domûsque Teutonic. ibidem Med. Ord.
& Academic. Curiol. dict. Chiron.

Cum Gratia & Privilegio S. C. Majest.

NORIMBERGÆ,
Impensis JOHANNIS GEORGII ENDTERI.
ANNO CHRISTI M. DC. LXXXVI.

NÜRNBERG, 1686
(Courtesy of the Boston Medical Library)

GEORG ABRAHAM MERCKLIN, LINDENIUS RENOVATUS,

theca chirurgica, two volumes, 1774, 1775, large quartos of 593 and 695 pages; the *Bibliotheca anatomica,* two volumes, 1774, 1776, large quartos of 816 and 870 pages and indexed by name; the *Bibliotheca medicinae practicae,* four volumes, 1776, 1777, 1779, 1788, quartos of 539, 722, 650 and 598 pages.

We may gain some idea of Haller's completeness if we check his editions of Paré against Miss Doe's recently issued *Bibliography.* Of the six editions of the *Treatise on Gunshot Wounds* by Paré, published before Haller's time, two are listed: the second French, 1551, and the first English, 1617. The important omissions were the first French and the two Dutch translations. All three of the anatomies and both of the surgeries are noted, a complete list of this group. The four editions of the *Treatise on the Plague* are missing. He does not list the *Cinq Livres,* Paris, 1571, but Miss Doe could not find it either. The edition of 1572 and the *Deux Livres,* 1573, are both recorded. The *Responce aux calomnies,* of doubtful date, is also missing, but not the *Discours de la mumie,* 1582. One more controversial book and the three editions of the *Sonnet to Guilleneau* are not to be found in Haller's list. Thus of the twenty-four separate books published before Haller's time, ten are given, the only important omission being the four books on the plague and the first edition of the *Treatise on Gunshot Wounds.* This is a remarkable tribute to Haller's scholarship, considering the difficulties attendant, at the time (about 1770), upon gathering his data. His record, moreover, in regard to the *Collected Works* of Paré is even better.

Of the twelve French editions of the *Collected Works* printed from 1575 to 1685, not including the variant issues of the same year, Haller lists eight and one bibliographical 'ghost,' 1588, which probably is a typographical error for the fine fourth edition of 1585 or the fifth of 1598. He only misses, therefore, with the above exception, the Lyons editions of 1633 and 1664, those poorly printed issues which Miss Doe found so 'detestable.' Perhaps Haller felt the same way and no one could blame him. His record for the English editions is two out of five, plus one bibliographical 'ghost.' He lists both German editions and two more which Miss Doe could not find, and five out of thirteen Dutch printings.

Haller's list is thus astonishingly complete, especially when compared with Linden, who only recorded two editions of the *Collected Works,* one 'ghost' and none of the separate works. Had Haller issued his *Bibliotheca physica,* it is probable that even a more complete bibliography of Paré's writings would have been published by him. When we consider Haller's additional comments on both the author and the book, we can only think of his labors as an almost superhuman task and agree with Fulton that, "the fire of incessant industry burned within his soul—and for such a man there is no limit of accomplishment."[20]

A new type of bibliography, however, was soon to appear; a comprehensive subject catalogue. This was the work of the professor of medicine at Tübingen, Wilhelm Gottfried Ploucquet (1744-1814), who ranks high in the field of medical bibliography. His *Initia bibliothecae medico-practicae et chirurgicae,*[21] in large quartos, begun in 1793, continued through the alphabet in eight volumes to 1797. A continuation and supplement of four volumes was issued from 1799 to 1803, only to be followed by his *Literatura medica digesta,* four volumes, 1808-09, and a supplement, 1814. This massive work, seventeen volumes in all, listed not only books but, for the first time, journal articles, for medical periodicals were beginning to be issued towards the close of the eighteenth century. Many of his references are to the *Journal de médecine,* first published in Paris in 1754. Others, given only by initials, are more difficult to identify. Dissertations were commonly noted. The book lacks an index and therefore, although larger, is not so useful to identify authors as Kestner's *Bibliotheca medica,* published nearly fifty years before. Ploucquet's work, however, stands out clearly as the first great subject catalogue in medicine and marks an important date in medical bibliography. Ploucquet, born in Rötenberg, received his doctor's degree from Tübingen in 1766. He became professor of medicine there in 1782 and continued until his death in 1814. Besides his remarkable bibliography, he accomplished an important piece of medico-legal research in regard to the weight of the lungs before and after breathing.

As Ploucquet was ending his volumes of medical bibliography and during the next two decades, up to 1830, numerous one or two-volume works appeared, some of which deserve mention. Most were subject catalogues: Karl Friedrich Burdach, *Die Literature der Heilwissenschaft,*[22] two volumes, 1810-1811; Johann Samuel Ersch, *Literatur der Medicin,*[23] 1812, with a new edition by Friedrich August Benjamin Puchelt in 1822; Thomas Young, *An introduction to medical literature,*[24] 1813; Kurt Sprengel, *Literatura medica externa recentior,*[25] 1829. Burdach lists over 14,000 subjects in his two large volumes, but the work loses much of its value by not having an authors index. Ersch is very complete, citing journals and dissertations as well as books. Puchelt's edition, ten years later, reflects the growing literature of the second decade of the nineteenth century. The incomparable Thomas Young wrote a simplified English Ploucquet, with an excellent index, 1813. A second edition, considerably enlarged, was issued in 1823. Kurt Sprengel's *Literatura medica,* 1829, is invaluable for German titles after 1750.

There was soon to appear, however, a work practically replacing all that had gone before and destined to become the forerunner of the *Index-Catalogue of the Library of the Surgeon-General's Office, U. S. Army.* This was the *Medicinisches Schriftsteller-Lexicon*[26] of Adolph Carol Peter Callisen (1786-1866). Callisen, a regimental surgeon and later professor of surgery at Copenhagen, was born in Gluckstadt,

Schleswig-Holstein, a part of Denmark. He studied at nearby Kiel and was made a doctor of surgery at Copenhagen in 1808. After his army service he became professor of surgery at Copenhagen, 1829, and librarian of the Academy, 1830. Retiring to Altona, near Hamburg, he died in 1866, the year Schleswig-Holstein became part of Prussia. He published thirty-three volumes of his author index-catalogue from 1830 to 1845. Garrison says, "As a complete conspectus of the medical literature of the last half of the eighteenth century and the first third of the nineteenth, this production ranks with Haller's as one of the most wonderful things ever achieved by a single man. It is invaluable for scope and accuracy."[27] There is little more to be said except to give some details of this extraordinary work. Each author and each book or article is numbered. Journal articles, books, abstracts of books, authors' dates, place of graduation, place of birth and death, portraits, obituaries and anonymous papers under subjects are all to be found in Callisen. A to Z took twenty-one volumes, 1830 to 1835; anonymous and miscellaneous writings, four more; then the alphabet begins again, A to Z in the eight final volumes. Recalling that Callisen only deals with the period from 1750 to 1830 and noting the arrangement of the volumes, anyone will find this a most useful and valuable index. Ploucquet and Callisen, one a subject and the other an author index-catalogue, supplemented one another until the whole, and much more, was packed into the *Index-Catalogue* by Billings. Before Billings began in 1880, however, a few smaller works are worthy of mention.

The *Repertorium der vorgüglichsten Kurarten, Heilmittel, Operationsmethoden*[28] by Ernst Rinna von Sarenbach, a subject index in two volumes, 1833, is particularly useful in finding references to older operations, such as glaucoma, hernia, etc. There is a good index. James Atkinson's unique *Medical bibliography,*[29] 1834, is next in chronological order, but it deserves a place in medical literature without date. Only covering the letters A and B, Atkinson, a profound student, writes with satire and humor that has seldom been equalled as he lists the authors and the books they wrote. This work, addressed "to all idle medical students in Great Britain," was written when the author was nearly seventy-five and, he writes, "wanting better amusement, and through mere accident, I stumbled upon the dry, dusty, tedious, accursed, hateful bibliography." The book is full of anecdote and out-of-the-way information, but is only moderately useful to the serious bibliographer. As a pleasant interlude in a dusty occupation it cannot be surpassed.

John Forbes' *A manual of select medical bibliography,*[30] 1835, under subjects, is nothing more than an appendix to a cyclopaedia of practical medicine, so popular one hundred years ago. Forbes is not so thorough as Ploucquet, although the references are easier to identify. His only reference to Paré is to the bibliographical 'ghost,' the collected edition of 1561. The *Handbuch der Literatur für die praktische Medicin und*

Chirurgie[31] by M. S. Krüger, 1842, is a more useful volume, but the best of this group, appearing between Callisen and the *Index-Catalogue,* is Wilhelm Engelmann's *Bibliotheca medico-chirurgica et anatomico-physiologica,*[32] 1848, an author index from 1750 to 1847, with a supplement published in 1868. It is limited to books published in Germany, but, for the first time, prices are given, making this book unique in its field. A similar work, largely dealing with the Dutch literature, is the *Bibliotheca medico-chirurgica et pharmaceutico-chemica*[33] by L. S. A. Holtrop, 1842.

On June 1, 1880, J. S. Billings wrote to the Surgeon-General, U. S. Army: "I have the honor to present herewith the first volume of a Catalogue of the Library of this Office."[34] This date deserves to be celebrated in every medical library in the world and were it not for the event described in Billings' simple statement, most of you would not be in the positions that you now hold and perhaps a dozen medical libraries would serve this country instead of the two hundred which you represent. For the *Index-Catalogue* not only completely supplanted all previous attempts at medical bibliography but it, "America's greatest contribution to medicine," stimulated the growth of libraries throughout the land. Had it not been for the judicious use of the old Civil War "Hospital Fund" by Billings, we would still be depending on Ploucquet or Callisen, or similar indexes of an individual type. Billings compounded the work of his predecessors into an author-subject index "in dictionary order in a single alphabet" and gave continuity and perpetuity to his project by associating it with the U. S. Army, an institution not likely to disband or even be seriously curtailed as long as America remained America. The only defect that Billings could see was in the fact that it was the catalogue of a single library and therefore could never be a complete medical bibliography. Based upon such a large collection of books and periodical literature as is contained in the Surgeon-General's Library, however, one finds little missing in the *Index-Catalogue.* If an item is not found, I hope I have been able to point out to you in my short space of time where the missing book or reference may be reasonably expected to be found. Thus, even today, you may have use for the pioneer efforts of Tritheim, Lecoq, Ploucquet, Callisen and the other medical bibliographers of the past. If so, their work will not have been in vain, for it was for your use and mine that they so assiduously labored.

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REFERENCE WORKS IN MEDICINE*

By Eileen R. Cunningham
Librarian, Vanderbilt University School of Medicine
Nashville, Tennessee

In any discussion of reference works, the definition of this term should be established, and it at once becomes apparent that no clear-cut definition can be given which will satisfy everyone. In selecting the works to be discussed here, I have tried to keep in mind Mudge's definition: works "meant to be consulted or referred to for some definite piece of information," rather than works to be read in their entirety. This interpretation has been used, however, in a sufficiently broad sense to include those works where extensive sections are to be consulted, as well as those works of more concise form; e.g., the difference between a chapter in a loose-leaf system of medicine and a concise paragraph in a biographical dictionary. No bibliographic reference works have been included in this discussion as they have been covered by another paper in this symposium.

As soon as one searches for material concerning reference tools in medicine, one finds that comparatively few of these works are listed in the general guides to reference books and that there is need for the compilation of a comprehensive outline of medical reference works. The 1936 Mudge, *Guide to Reference Books,* devotes only three pages to medicine, including the allied sciences. Minto's *Reference Books* gives even less. Louis Shores' *Basic Reference Books,* published in 1937, has only a half page on medical publications. When it is considered that these lists of reference works cover such a wide field and so many specialties, this is not surprising; but it does indicate that the compilation of an extensive list of medical reference books, arranged on somewhat the same plan as Mudge or Minto, would be a great aid for medical libraries.

The appended list, which should not be regarded as comprehensive in any sense, gives the titles of various reference works in medicine. The titles have been given in short form and no attempt has been made to give complete bibliographic details. In some instances new editions other than those listed may have appeared or be in preparation, as it was not possible in the time available for the preparation of this paper to check this point in every instance. Books of the same type have been grouped

* Read at a symposium on Medical Literature at the Fortieth Meeting of the Medical Library Association, Boston, June 29, 1938.

together and arranged on a chronological basis. As stated above, no exclusively bibliographic reference works or indexes have been included. In many cases, the usage and scope of the works on this list are so obvious that they require no detailed comment; therefore, only the general types and a few of the less familiar works will be discussed, and some of the needs which have become apparent during the survey will be indicated.

DICTIONARIES

The first medical dictionary to appear in Great Britain was an English version of Stephen Blankaart's *Physical Dictionary,* 1684. Some of the more important of the early English dictionaries which followed are those of John Quincy, 1719, Robert James, 1743, and Robert Hooper, 1798. Of the early American dictionaries, those of Robley Dunglison, 1833, and John Shaw Billings, 1890, are among the most interesting. The Billings work includes French, German, Italian and Latin terms. Garrison cites the work of Frank Pierce Foster, 1888-93, in four volumes, as the best American medical dictionary from the point of view of scholarship. A study of the old dictionaries gives an interesting picture of the development and changes in medical terminology, and in a sense they form an historical outline of medicine.

The excellent current medical dictionaries are so familiar that they require no comment, but there are a few of the foreign language dictionaries that should be mentioned. There are good modern German-English, Spanish-English, and Italian-English medical dictionaries available, but no French work of this type which is at present in print. The Gordon *French-English Medical Dictionary,* published in 1921 by Blakiston, is already out of print, and while they have indicated that sometime a new edition might be published, nothing definite has been announced.

There is an excellent little polylingual work, Meyer, *Medizinisches Taschenlexikon,* giving medical terms in eight languages. The key word is always given in German, and this German term is followed by the term in seven languages. For example, if one looked up the word "compress," it is designated by (e), indicating that it is an English term, followed by the German equivalent "Umschlag." Under "Umschlag" will be found all of the other seven equivalents. This work, while limited in scope, is invaluable when trying to find comparable terms in different languages, particularly in less familiar languages, such as Japanese or Russian.

DIRECTORIES

Of the older American medical directories *Polk's Medical Register* was among the most useful. This has been replaced by the American Medical Association's *American Medical Directory.* This work is so comprehensive and so useful that any young medical librarian should

study the foreword and general outline of each new edition in order to become familiar with the wealth of information it contains. In addition to these two comprehensive works, there are a multitude of both old and modern local directories which it is impossible to list here. There are also many foreign works of this type. Again this offers opportunity for some enterprising librarian to compile a check list, and also a check list of directories of the members of medical societies that have been published by the societies.*

Minerva, Jahrbuch der Gelehrten Welt, a directory of institutions of learning, deserves some special mention. Since 1932, this work has appeared in two sections. One section gives details concerning societies, special institutes, museums, observatories, libraries, etc., listed under the names of the cities in which they are located. This is followed by an alphabetical list of the international and national societies. Under the name of each country a list of cities is given, the name of each city accompanied by symbols indicating what type of organization will be found listed under that given city. Finally, there is an alphabetical list of personal names referring to the pages on which the names appear.

The second section, which lists universities and colleges, contains information concerning them given under practically the same arrangement as outlined above for the other section, except that the alphabetical list of universities and the list by countries appear at the front of the volume, while the index of personal names is at the back of the volume. The 1938 edition just received shows further changes; the university section is divided into two volumes, one for European universities and one for non-European. A list by countries, the alphabetical list of universities, and the personal name index are given at the back of each volume. The inclusion of an alphabetical list of universities and societies under their own names in each volume of the last few editions renders *Minerva* infinitely more useful for quick reference than was possible with the older editions.

In 1936 a separate volume was published consisting of the 70,000 personal names used in the university volume for that year. This list is arranged under subject specialties, then by geographical location and then alphabetically. For example: "medicine," then by subdivision, "surgery," then under "surgery U.S.A." (Vereinigte Staaten), then by state, "California," and under California alphabetically by the individual's name. *Minerva* is indispensable to medical libraries, as well as general libraries, and because of its continually changing and complex arrangement it seems to justify detailed mention.

* Since the presentation of this paper, such a check list has been compiled by Mrs. Irene Strieby, of the Lilly Research Laboratories Library.

QUOTATIONS

Any one attempting to look up statements made by medical men, or quotations about medicine and physicians, is soon confronted by the fact that very little is available at present which is helpful on the subject. Stevenson's *Home Book of Quotations* devotes only three pages to medical quotations out of a total of 2400 pages, and most of these are from non-medical works and authors. The dictionary of foreign quotations edited by Jones, 1923, gives practically nothing. Putnam's *Complete Book of Quotations,* 1926, contains scattered quotations on medicine, doctors, etc., but mostly by non-medical authors. Bartlett's *Familiar Quotations,* last edition edited by Christopher Morley, has very little under medicine and almost no medical authors. There are also several compilations covering the work of one individual such as Camac's *Councils and Ideals from Sir William Osler's Writings.*

John Lindsey's *Medical Quotations from English Prose,* 1924, is useful but limited in scope, and the majority of the authors cited are non-medical. Two other works should be mentioned: Baratte, *Essai de Littérature Médicale . . . Extraits des Auteurs les Plus Célèbres,* Paris, 1846, and James Lindsay's *Medical Axioms, Aphorisms and Clinical Memoranda, London,* 1922, but none of the works mentioned above adequately fill the need for a compilation of medical quotations such as has been compiled for law by Gilbert J. Clark in his *Great Sayings by Great Lawyers,* 1922 (frequent reprintings, last 1936), Washington, D.C., Law Publishing Co. While the format of this book leaves much to be desired, it does represent an effort to collect interesting statements by eminent persons in a great specialty.

The Winthrop *Chemical Calendar,* the Rosenthal *Medizinisches Welt Kalender,* and the William R. Warner *Calendar of Medical History,* published largely for advertising purposes, carry medical quotations. It would be interesting to know if these firms keep a file of the quotations used and a record of their sources.

Any one familiar with the writings of famous medical men knows that they contain material which would be useful from the quotation standpoint. This offers an unlimited and attractive field of work for the medical librarian who is willing to attempt such a compilation. Such work would also afford the compilers an opportunity to become familiar with much of the literature on the subject that is forming the background of their chosen career and an opportunity to render it better known and more familiar to both readers and librarians.

BIOGRAPHICAL DICTIONARIES

The earliest biographical work of any importance is cited by Garrison as N. F. J. Eloy's *Dictionnaire Historique de la Médecine,* 4 volumes,

Paris, 1778. The first edition appeared in 1755, but the enlarged edition is the more useful. Thomas J. Pettigrew's *Medical Portrait Gallery, Biographical Memoirs of the Most Famous Physicians, Surgeons, etc.,* is one of the most interesting of the older works, and contains many fine portraits. A more modern work of this same character is Stirling's *Some Apostles of Physiology,* which contains beautiful portraits and plates.

Some of the American biographies containing nice portraits are the first edition of Atkinson, *Physicians and Surgeons of the United States,* and Thacher, *American Medical Biography.* It is important from the standpoint of portraits to have the first edition of the Atkinson, as the second edition is unillustrated.

The most comprehensive and useful modern work on medical biography is the second and enlarged edition of Hirsch's *Biographisches Lexikon,* which appeared in 1929. Two supplement volumes of this work, edited by Fischer, 1932, cover the last fifty years and are an invaluable addition for material concerning contemporary medical biography. Kelly's two biographical dictionaries are, of course, excellent for American medical biography. The *Dictionary of American Biography* and the *Dictionary of National Biography* (British) contain many biographies of physicians.

The "who's who" of the various countries are also helpful for obtaining information concerning contemporary scientists, but here again we come to a needed medical reference work. *Medical Who's Who* was published in London, 1913-27; and an American work, *Who's Who in American Medicine,* was published in 1925, but there seems at present to be no "who's who" in medicine appearing at regular intervals.* *Who's Who Among International Medical Writers,* edited by A. Lawrence, was listed for publication in 1932 by the Golden Syndicate Publishing Company. A recent letter from this firm states that the work was never published, having been withdrawn because of the small number of advance orders. An international "who's who" in medicine would be exceedingly useful for obtaining information concerning the younger scientists working abroad; such a reference work is necessary in cataloging when names and dates must be established. If works of this type were issued with new editions planned, say, only every five years, and could include junior members of the teaching staffs of the medical schools as well as heads of departments, a much needed want would be filled. As far as I know, such information does not appear anywhere else at present. The general *International Who's Who* contains very few medical names, and then of only the older and famous men.

* Since this paper was presented, the publication of *Who's Who among Physicians and Surgeons,* an authoritative biographical directory of American and Canadian Men of Medicine, edited by J. C. Schwarz, has been published.

HISTORY OF MEDICINE

The two earliest histories of medicine are Le Clerc, 1696, and Freind, 1725-27. While interesting, they are really of only slight practical use.

Heinrich Haeser's *Geschichte der Medizin,* and Neuburger and Pagel's *Handbuch der Geschichte der Medizin,* are excellent reference works. Garrison's *History of Medicine* is a real mine of information, with its chronological appendices and bibliographic notes for collateral reading. Other valuable modern reference books on this subject are: Packard's *History of Medicine in the United States,* 1931, and Castiglioni's *History of Medicine,* of which there is a French translation, and I understand that an English translation by Dr. E. B. Krumbhaar is in preparation but will not be available for over a year.*

Numerous histories of the specialties and histories of medicine in different localities have appeared, but they have not been included in the appended list.

Dr. Henry Sigerist, of the Johns Hopkins Institute of Medical History, has announced that he is working on a four volume history of medicine which is to be extensively illustrated, and which will contain numerous maps. This work will also have two supplement volumes on sociologic medicine. The appearance of this monumental publication will be eagerly awaited by everyone interested in the subject.

MEDICAL ENCYCLOPEDIAS, HANDBÜCHER, AND LOOSE-LEAF SYSTEMS OF MEDICINE

Historical surveys of medical literature show that encyclopedias of medicine compiled by several authors and not unlike the modern works published today, appeared during the Renaissance period. Garrison cites the *Aldine Medici Antiqui Omnes,* 1547, the *Medicae Artis Principes* of Stephanus, 1567, and Caspar Wolf's *Gynaeciorum,* or encyclopedia of gynecology, 1566, as among the best known.

The modern form of encyclopedia originated in such works as Ephraim Chambers' *Cyclopaedia of Medicine,* 1728, the "Panckoucke," *Dictionnaire des Sciences Médicales,* 1812-22, 60 volumes, and the *Dictionnaire Encyclopédique des Sciences Médicales.* These were followed by many others in rapid succession. Ziemssen, Nothnagel and Eulenburg were among the great nineteenth century encyclopedists, and Sir Clifford Allbutt and Sir William Osler edited some of the best reference works of the early twentieth century. Each of the series of the *Index-Catalogue of the Library of the Surgeon-General's Office* contains, under "Medicine-Encyclopedias," an excellent list of both historical and practical value.

Modern librarians can choose from many titles, in many subjects, ex-

* The first two volumes of the history of medicine by Laignel-Lavastine have just been published. The third volume is in preparation.

haustive, and, alas, expensive, works to put upon their reference shelves. The American preference seems to be for "loose-leaf works"; the German, for "Handbücher." They both have certain advantages and certain drawbacks. Loose-leaf publications permit rapidity of revision and avoidance of new editions which immediately render the previous one obsolete. This is a distinct advantage. On the other hand, they are not durable under heavy usage. They cannot be taken out of the reading room, as pages are likely to be lost, and the pages are troublesome to insert properly. They are also expensive to keep up; the subscription prices for the year's service being a considerable expense.

The German "Handbücher" are entirely different. They are exhaustive works, usually of many volumes and by many authors. They undoubtedly contain information which is invaluable and often unobtainable elsewhere. They are durable in form and have beautiful illustrations and plates. The disadvantages consist in the price; they are terribly expensive, and it is often difficult to figure in advance what any given work will cost, or the number of volumes which will be published. They appear slowly and in a haphazard manner, and by the time the work is completed the volumes which have appeared first may be already out of date, which necessitates the issuing of supplement volumes or the publication of a new edition. It is absolutely necessary to make analytic catalog cards for them if the contents are really to be used advantageously; this is often a tremendous task, and even when printed cards are available they are very expensive. Abderhalden's *Handbuch der Biologischen Arbeitsmethoden* probably represents the best illustration of all of the disadvantages mentioned above, and yet it contains a wealth of technical detail. This hand book has been analyzed by the American Library Association's Cooperative Cataloging Committee, and while the cards cost several hundred dollars, without the cards the information contained in the numerous volumes is buried.

REVIEWS, ANNUALS, ABSTRACTS

The various annuals such as the *Annual Review of Biochemistry* are useful for reviewing the latest developments in a given specialty. The "Recent Advances" series covering the various specialties are also useful from this standpoint, as well as the *Practical Medicine Yearbooks*.

The "Ergebnisse," while really periodicals, have a bearing on reference work. These German publications contain articles reviewing some special subject and contain excellent bibliographies. These bibliographies are useful even to readers not having a command of the German language. American review journals of the same type as the "Ergebnisse" are *Physiological Reviews* and *Medicine*.

Abstract journals of course represent reference tools. At present there

is no comprehensive abstract journal of clinical medicine which includes the specialties, and one must search through the abstract sections of many journals to obtain information on clinical subjects, and even after a painstaking search one cannot be sure the ground has been adequately covered. The need for such a publication is quite obvious.

PHARMACOPOEIAS AND DISPENSATORIES

One cannot discuss the question of reference tools without touching briefly on the pharmacopoeias and dispensatories. Garrison cites the Florentine *Ricettario,* 1498, as the first official pharmacopoeia. This was followed by various pharmacopoeias, such as those of Valerius Cordus, 1540, Brice Bauderon, 1588, Libavius, 1606, and certain city pharmacopoeias. The first London Pharmacopoeia was published 1618, and contained nineteen hundred and sixty remedies. A study of these older publications gives an excellent picture of the materia medica of the day.

The first official *Pharmacopoeia of the United States* was published in 1820, and has been followed by revisions every ten years. In 1864 the General Council of Medical Education and Registration of Great Britain published the first edition of the *British Pharmacopoeia.* Similar publications appear in many countries from time to time. The publications are usually supplemented by dispensatories and other companion works to the pharmacopoeias. The *United States Dispensatory,* edited by George Bacon Wood and others, and the *National Formulary,* issued by the American Pharmaceutical Association, have gone through many editions. A very useful unofficial list of drugs is the volume of *New and Nonofficial Remedies* issued annually by the American Medical Association.

REFERENCE WORKS NEEDED

We have seen during this survey of the tools available for medical reference that certain gaps exist which might be filled to advantage. At the very start we found that no very extensive bibliography of medical reference works has been compiled. A new edition of Gordon's *French-English Medical Dictionary,* or some similar modern work, is needed. A check list of the directories of members of medical societies which are published by the societies,* would be useful, and also a check list of the various local directories of physicians which have been published in different countries. An American "who's who in medicine" and an "international who's who in medicine," to be issued, say, at five year intervals, would be welcome additions to the library. An extensive book of quotations by medical authors, and of references made by famous authors to medicine, would be a great help and an extremely interesting piece of

* *See* Strieby, Irene and Pond, Emily. Check list of Society Directories. *Med. Lib. Asso. Bulletin,* **27**:75-82, 1938.

work waiting for the hand of an ambitious scholar in medical library work. Or, perhaps the answer to the problem would be an editorial committee to whom quotations gathered from the literature could be sent, and who could direct and coordinate the work being done by different persons, collaborating in a task which might be a formidable undertaking for one individual. Finally, we find the need for a comprehensive abstract journal in clinical medicine.

Among those needs which have been noticed and work already begun to fill them, is a list of medical lectureships and where they are published. Mrs. Dorothy Cantrell, one of the Vanderbilt University School of Medicine Library staff, having noticed the difficulty encountered in her own reference work in supplying information of this character, has begun to compile the information, but it will be a matter of a year or more before it will be completed.

MEDICAL REFERENCE WORKS*

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* This list should not be regarded as comprehensive in any sense. No bibliographic reference works or indexes have been included. Books of the same type have been grouped together and arranged on a chronological basis. The titles have been given in short form and no attempt has been made to give complete bibliographic details.

I wish to thank Mrs. Dorinda Knopp of the Vanderbilt University School of Medicine Library for her aid in editing this list of reference works.

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Ergebnisse der gesamten medizin
Ergebnisse der hygiene, bakteriologie, immunitätsforschung und experimentellen therapie
Ergebnisse der inneren medizin und kinderheilkunde
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TEXTBOOKS AND GENERAL TREATISES*

By Isabelle T. Anderson
Librarian, Ramsey County Medical Society, St. Paul, Minnesota

In beginning a discussion it is usually customary to define the subject in order that there shall be no question in anyone's mind as to what is under consideration. For our purpose we shall consider general treatises and textbooks as one class, since the line of demarcation between the two is so indistinct. The definition of a textbook according to Webster is: "Any manual of instruction; a book containing a presentation of the principles of a subject, intended to be studied by the pupil and used as a basis of instruction by the teacher." We shall include here, then, books of the teaching type which includes a large variety, since the same books are not used as texts in every medical school. In most cases these books go out of date and are superseded by other texts or by other editions, for they are actually correlations of accepted basic facts and the results of recent investigations, and as such are not necessarily permanent.

In differentiating a textbook from a monograph one might say that the latter is an exhaustive work on a particular subject, and therefore much narrower in scope but greater in detail. For example, *Diseases of the Liver, Gall bladder, Ducts and Pancreas,* by Weiss is of textbook type, whereas *The Bile* by Horrall is a monograph. In general, monographs are used for collateral reading or more intensive study and not for a superficial comprehension of the subject.

In contrast with textbooks, which are essentially meant for continuous reading, reference books are just what they imply—books for reference. They are used to look up certain points or sections of a large general subject. It is true that the dividing line between the two is hard to distinguish, for with many books it is the use which is made of them which puts them into one class or another. For example, Cecil's *Textbook of Medicine* is used as a text, but because of its terse description of a great number of conditions, it is also used as a reference book. We shall have in mind, however, books which can be used as teaching material instead of for occasional reference, and this excludes such sets as Tice, Nelson, Abt, Lewis and the like.

The value of textbooks as a class in comparison to reference books, periodicals, bibliographies and so on, depends on various factors. The

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general feeling about the permanent value, or lack of permanent value of textbooks is perhaps best stated by Dr. Louis B. Wilson, who said in his article on "The Physician's Reading" (*Military Surgeon* **80**:251-260, 1937) that: "The chief trouble with the medical treatise, however, is that it is outmoded so soon after it leaves the press. Very few medical books retain clinical significance more than five years." Obviously there are some books which do not come under this indictment but which will always have some value. In support of this contention Dr. Paul D. White in his article on "Doctors and Books" (*New England Journal of Medicine* **218**:338-343, 1938) says that: "A classic or a leading textbook of the past is far more valuable than a second-rate volume of the present, in a practical sense as well as from the standpoint of the book collector." We can easily see the justice of the attitude of both of these men, but time itself is probably the only factor which can decide the permanent value of such books.

The current value of textbooks on the other hand, depends on the use made of them in different types of libraries and by different classes of readers. In a library connected with a medical school, because of required student reading, the textbooks, in point of actual turnover, are used more than any other type of material. Professors and research workers depend on periodicals as much as or more than they do on textbooks; in fact, they make up the one group which, more than any other, uses all types of medical literature. In a public medical library where there are all classes of users the emphasis is slightly different. A doctor usually desires material that is more recent than that which can be found in a book, unless he wants to look up a point which is outside of his particular field. Then he wants the latest possible textbook, or else the book he studied in school. Students mainly wish to see texts. Lay readers use textbooks to a certain extent, but only the very general ones. Virtually the same conditions are found in medical society or academy libraries. The specialist rarely uses a textbook, the general practitioner usually is satisfied with one, students use them almost entirely, and lay people find in them what they want, if they find it anywhere. Since textbooks are the basis for all reference work, in medical society or academy libraries where most of the work is reference work, textbooks and general treatises rank about equally with periodicals and reference books.

The selection of textbooks for purchase is the question which is uppermost in the minds of those who have that responsibility, and to help in that matter we will try to formulate some principles rather than to lay down any definite rules. For suggestions for a basic collection may I call attention to the following articles which include excellent foundation lists of textbooks. Other editions have of course come out since these lists were published, but they can easily be substituted for the ones listed.

Lists such as these must be continually revised, but they do include many books which every library should contain.

"The hospital medical library." *Amer. Coll. Surgeons, Bull.*, **22**:32-53, 1937. The list in this article is based on the excellent foundation list given by Mr. Frankenberger in the same *Bulletin* in June, 1932, but some newer books have been added.

"Hospital medical library suggestions," prepared by the Council on Medical Education and Hospitals of the Amer. Med. Assoc. *J.A.M.A.*, **108**:1052-1059, 1937. The list in this article is essentially the same as the one mentioned above, but it is somewhat longer. A bibliography of suggested lists of books and periodicals will be given at the end of this paper, but since there is some duplication, only the latest lists are mentioned here.

Once a collection has been formed, the extent of further additions depends on the amount of money allowed for expenditure for books, a sum which has no doubt been designated in the budget. The decision as to how much money should be appropriated must be made on the basis of the total funds available and on the possibility of gifts or exchanges as well as on the relative demand for texts compared to that for reference books and periodicals. This is a matter for each particular library to decide, so no general rule can be laid down.

After an amount of money has been allocated for the purpose, there are various ways of making the actual selection of new material. Some librarians wait until books have been reviewed before buying them, and although this procedure makes for careful and thoughtful buying, it does have some disadvantages. Anyone can realize that few are the unbiased reviews which do not obviously reflect the personal prejudices of the reviewer. The fact that the author is known to the reviewer may produce a favorable or an unfavorable review regardless of the real worth of the book, and often the worth of a book is decidedly a matter of opinion. The way out of this dilemma is to read several reviews and take the judgment of the majority. This takes time, which is the second objection to this method of selection. While you are making up your mind if a book is worth buying or not, you may be keeping someone who has asked for that book waiting a month, two months, or four months. Reviews are most helpful, however, and if the book in question is one about which there need be no hurry, then as many as possible should certainly be consulted before purchasing.

In many libraries, the matter of selection of books to buy devolves upon a committee, and in that case the librarian is relieved of responsibility, although of course he may make suggestions which carry as much weight as the opinions of a committee member. Here again, opinions will

differ, but if the committee is large enough and composed of people who can see further than their own specialty, sound decisions may be made.

In some cases the selection of books is left to the discretion of the librarian. The same matter of funds and demand must guide him, but in addition he must weigh as carefully as possible the relative worth of various textbooks, since the decisions lie entirely on his shoulders. He must know which books are in print, which new ones are coming out, and which are worth buying and which are not.

The matter of keeping up on which books are being published and which are available is accomplished in various ways. There is no difficulty in securing publishers' announcements for all new books or new editions of books once a library is on the mailing list, and publishers are glad to send current catalogs which show what books are in stock. Another way of knowing what is coming out is to watch the publishers' advertisements in the periodicals, and one soon learns which are the periodicals which have the most of these announcements and should be watched routinely. If you have a dealer from whom you purchase your books, you can ask him questions which arise and he can save you much time and effort. Only experience and observation can be of assistance in developing a critical judgment as to the relative worth of various textbooks in the same field.

One of the most difficult questions to decide is which and how many editions of a textbook should be secured. If a new one comes out every year or two, should one buy every edition, every other edition, or just certain editions? If there were some way to tell when a new edition is a real revision, or when it is simply a reprint with minor additions or subtractions, this problem would be solved. Of course, if it is possible to obtain on approval the new editions as they come out, and to have someone carefully compare the two, that would be a better solution of the problem. Books may be secured on approval, but if they are ordered directly from the publisher that is sometimes a rather lengthy process and it isn't always possible to have them looked over immediately. Publishers are primarily interested in selling as many copies as possible, and of course they are not likely to tell you when a new edition is a reprint instead of a revision, nor when a new edition is coming out. There are always some texts, such as Joslin's *Treatment of Diabetes Mellitus* and White's *Heart Disease,* the new editions of which you can depend on being revisions. The difference in size of some of them make it obvious that there have been decided changes, although this is not always true, for in the case of Homans' *Textbook of Surgery,* the second edition, although completely revised, has the same number of pages as has the first edition. Some books which have frequent editions are certainly not revised every time, so one needn't try to buy every edition of those books. If there are several textbooks on the same subject which have new edi-

tions coming out about the same time, a scheme which appeals to reason is to buy a new edition of one book one year, and of another book the next year or the next, if they are kept up to a high standard. Thereby one may always have on hand one late edition of a good textbook on a certain subject.

An interesting study in this connection is the effect different editors and translators have on certain books. It is undoubtedly true that McCrae carried out the policy and spirit of Osler in his editions of the *Principles and Practice of Medicine,* and the later editorial board continued that policy. It is generally conceded that the Duane translation of Fuchs' *Textbook of Ophthalmology* is superior to the later translation of Brown, which incidentally makes the later Duane editions scarce and valuable. It will be interesting to note what changes will be made in Sutton's *Diseases of the Skin* which is soon to appear, where the younger Sutton has done most of the revision.

Something might be said here about the most important publishers of medical texts. It would be impossible and useless to try to mention all the publishers who bring out medical books, but some of the more important will be listed here. Blakiston, Appleton-Century, Lea and Febiger, Saunders, Lippincott, Oxford, Mosby, and Macmillan have been in the publishing business for many years; their books can always be depended on to be by reputable authors, and well published. Paul B. Hoeber, as the Medical Department of Harpers, is continuing to carry on the fine workmanship by which it distinguished itself, although the number of books published is a little less than by the previous press. Thomas, in Springfield, Illinois, is a somewhat younger house, but the books published by it are especially fine in make-up. The university presses, such as the University of Chicago, Columbia University, Johns Hopkins, University of Minnesota and Stanford University, while not being new in the publishing field, are bringing out more and more medical books both in the field of texts and in monographs. There are any number of other companies which bring out fewer medical books, and some general publishers which occasionally publish medical as well as other scientific books.

Of the foreign publishers we might only mention among the English, Baillière, Tyndall and Cox, Cambridge University, Allen and Unwin, Oxford University (which we have already mentioned among the American publishers); Masson and Doin among the French; and Springer, Thieme and Fischer among the German.

Much more might be said about textbooks and the evaluation of particular ones, but there is not time in this short and elementary paper. We have only tried to sum up the main facts and problems which are connected with the subject, and it is to be hoped that a free discussion has been stimulated in which very definite points may be brought out.

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THE PERIODICAL LITERATURE OF BIOCHEMISTRY*

By Herman H. Henkle, *Director*
School of Library Science, Simmons College, Boston

The evaluation of printed materials is a matter of primary importance to librarians, and any aid in this direction is welcomed by them. This is especially true in respect to the periodical literature in the sciences. Attempts have been made with moderate success to apply objective methods of evaluation. In 1927, Gross and Gross[6] set a pattern for the evaluation of chemical periodicals which has since been followed for physics and radio,[9] mathematics,[1] geology,[7] electrical engineering,[3, 14] civil engineering,[13] child guidance,[12] the medical sciences,[4, 11, 16] dentistry,[8] endocrinology,[5] and endocrinology of sex.[15]

Assuming that the composite of all bibliographical citations accompanying published scientific papers represents the group judgment of scientists as to which publications are most significant, statistical analyses have been made of such citations to scientific journals, to determine those journals most important to research workers, and most deserving of purchase by libraries. Lists of journals are tabulated in the order of the frequency with which they are cited, this frequency being accepted as representing the relative importance of the journals. The validity of the assumption upon which this procedure is based is dependent upon whether the source from which the citations are tabulated is representative of the subject field for which the leading journals are being determined, and whether a sufficiently large sample is taken to assure reliability. Unfortunately very little attention has been paid to the latter in many of the studies.

The papers by Gregory,[4, 5] Hackh,[8] Jenkins,[11, 12] Mengert,[15] and Sherwood[16] represent applications of the method described to periodicals of bio-medical interest. Through these, and other interesting papers such as those by Cunningham[2] and Hunt[10] the medical librarian may acquire much useful information. For the reason that periodicals of general medicine have been so fully treated, repetition is avoided here by reporting the results of a study in which the methods of statistical bibliography were applied to an evaluation of the periodical literature of biochemistry.

When the first volume of the *Annual Review of Biochemistry* appeared in 1932, it seemed to present a good source for information about

* Read at a symposium on Medical Literature at the Fortieth Annual Meeting of the Medical Library Association, Boston, June 29, 1938.

the distribution of biochemical literature. This was borne out in the analysis of the bibliographies. The danger of bias favoring periodicals in certain languages, or favoring some schools of thought was obviated by the fact that there was some change of reviewers each year, and that during the five-year period covered by the analysis more than fifteen countries were represented.

The bibliographies were analyzed statistically and a list of journals arranged in the order of the frequency with which they were cited. This process was repeated each year for each new volume through volume 5 (1936). This was done to check the reliability of a single volume of the *Annual Review* for showing the relative importance of scientific journals for biochemistry. The percentage scores of the leading journals as indicated by each of the five volumes of the *Annual Review* were correlated with the scores of the leading journals as indicated by each of the other volumes and within various combinations. Results ranging from $.864 \pm .003$ to $.998 \pm .001$ indicated that any volume or combination of volumes represented a reliable sample of the literature.

In determining sample reliability, the percentage scores of the leading journals only were used. As a check against this method, correlation coefficients were calculated for different proportions of the distribution from twenty through seventy-eight of the most frequently cited titles, beyond which each additional periodical contributed less than 0.2 of one per cent. of the total number of citations. The uniformity of the several coefficients given in Table 1 indicates that no important error is introduced by the elimination of the "tail" of the distribution (see Figure 1) in the determination of sample reliability.

TABLE 1

Coefficients of correlation for different proportions of the distribution of journal titles as tabulated from the *Annual Review of Biochemistry*, vol. I and II (1932 and 1933)

Scores	1.0% or more N=20	0.8% or more N=25	0.5% or more N=33	0.3% or more N=53	0.2% or more N=78
r=	$.974 \pm .002$	$.974 \pm .001$	$.972 \pm 001.$	$.973 \pm .001$	$.969 \pm .001$

Jenkins,[11] Mengert,[15] and Gregory[4] have reported how the distribution of significant literature in various scientific journals illustrates the law of diminishing returns. The same holds true with the literature of biochemistry. Of special interest from the standpoint of theoretical considerations in statistical bibliography is the high degree of uniformity of this phenomenon in different samples of the literature. This is illustrated in Figure 1, where three cumulative frequency curves of the percentage of citations in periodicals titles are superimposed. For further theoretical considerations the reader is referred to Dalziel.[3]

The five volumes of the *Annual Review of Biochemistry* contain

17,198 references to 851 periodicals. The first four titles contain 32 per cent of the significant literature, and thirty-seven titles contain approximately 70 per cent. The principal portion of the literature is fairly well

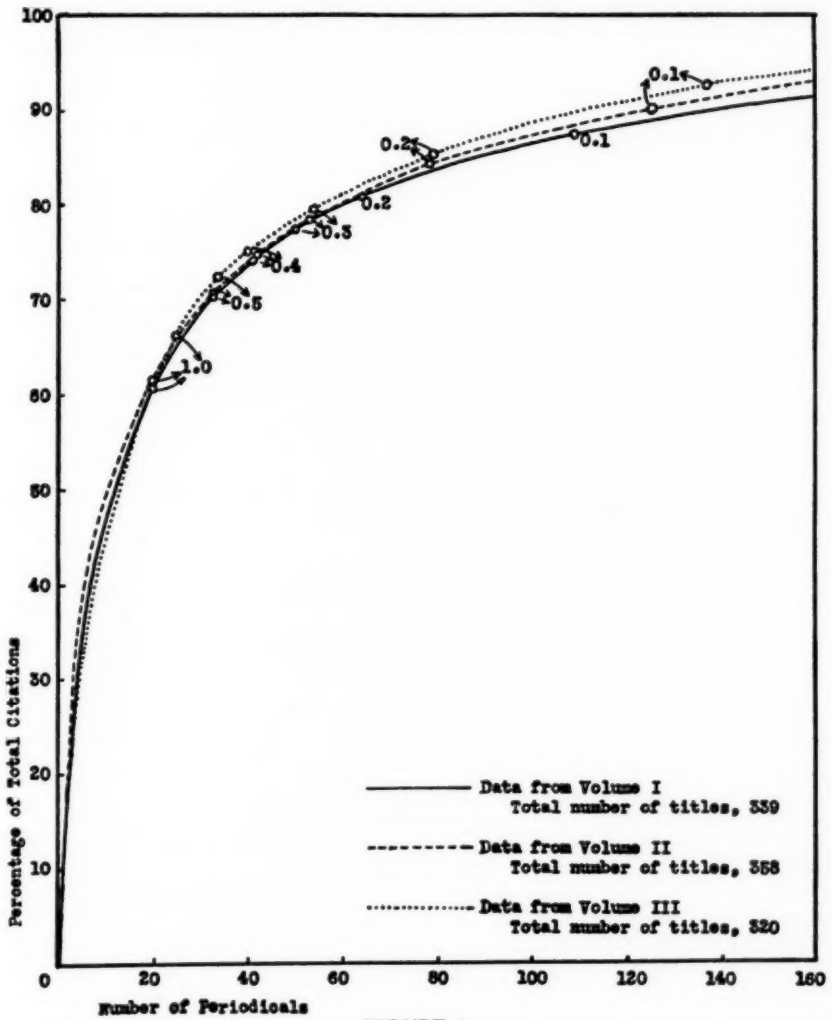

FIGURE 1

Cumulative frequency curves showing the degrees of concentration and dispersion of the periodical literature of biochemistry. Data compiled from the *Annual Review of Biochemistry*, vol. I-III (1932-1934). The points on the curves indicate the percentage of literature in each periodical at that position.

concentrated into relatively few journals, but the total current literature is remarkably dispersed. The journals which include 0.4 of one per cent or more of the literature are given in Table 2 in the order of their relative importance for biochemistry.

TABLE 2

Leading periodicals for Biochemistry as indicated by analysis of the bibliographical citations in the *Annual Review of Biochemistry*, vol. I–V (1932–1936)

Rank	Name of Journal	Number of Citations	Cumulative % of Total
1	*Journal of Biological Chemistry*	1,614	9.384
2	*Biochemische Zeitschrift*	1,381	17.414
3	*Biochemical Journal*	1,255	24.711
4	*Hoppe-Seyler's Zeitschrift für physiologische Chemie*	1,219	31.799
5	*American Journal of Physiology*	603	35.305
6	*Society for Experimental Biology and Medicine. Proceedings*	478	38.084
7	*Deutsche chemische Gesellschaft. Bericht*	462	40.770
8	*Société de Biologie. Comptes Rendus*	409	43.148
9	*American Chemical Society. Journal*	325	45.037
10	*Journal of Physiology*	321	46.903
11	*Klinische Wochenschrift*	270	48.472
12	*Nature*	254	49.949
13	*Helvetica Chemica Acta*	242	51.356
14	*Journal of Nutrition*	236	52.728
15	*Chemical Society, London. Journal*	222	54.018
16	*Académie des Sciences, Paris. Comptes Rendus*	183	55.082
17	*Journal of General Physiology*	181	56.034
18	*Société de Chimie Biologique, Paris. Bulletin*	176	57.057
19	*Archiv für experimentelle Pathologie und Pharmakologie*	174	58.068
20	*Justus Liebig's Annalen der Chemie*	171	59.062
21	*Pflüger's Archiv für die gesamte Physiologie*	170	60.050
22	*Die Naturwissenschaften*	168	61.027
23	*Science*	154	61.922
24	*Royal Society of London. Proceedings, Series B*	145	62.765
25	*Journal of Experimental Medicine*	136	63.556
26	*Journal of Clinical Investigation*	126	64.289
27	*Zeitschrift für die gesamte experimentelle Medizin*	121	64.993
28	*Lancet*	117	65.673
29	*Archives of Internal Medicine*	99	66.249
30	*American Medical Association. Journal*	95	66.801
31	*British Journal of Experimental Pathology*	79	67.260
32	*Journal of Biochemistry, Tokyo*	79	67.719
33	*Società Italiana di Biologie Sperimentale. Bollettino*	78	68.173
34	*Zeitschrift für Immunitätsforschung und experimentelle Therapie*	78	68.627
35	*Journal of Pharmacology and Experimental Therapeutics*	75	69.063
36	*Endocrinology*	70	69.470
37	*Society of Chemical Industry, London. Journal*	69	69.871
	814 other titles	5,163	99.916
	Total number of citations	17,198	

The literature of forty-five different subjects was reviewed in the five-year period. For the most part these subjects were not reviewed frequently enough, or were not represented by sufficient citations to indicate reliably the most important journals. Some, however, were reviewed in each of the annual volumes, and are represented by a considerable literature. Seven of these subjects with the journals containing 2 per cent or more of the literature for the respective subjects are presented in Table 3.

Caution is advisable in the use of these lists. It has been shown by

TABLE 3

Leading periodicals for each of seven aspects of biochemistry as indicated by analysis of the bibliographical citations in the *Annual Review of Biochemistry*, vol. I–V (1932–1936)

Subject	Total Number of Periodicals	Total Number of References	Leading Journals	Number of References	Cumulative % of References
Chemistry of proteins and amino acids	84	850	*Journal of Biological Chemistry*	191	22.5
			Biochemische Zeitschrift	75	31.3
			Biochemical Journal	73	39.9
			American Chemical Society. Journal	71	48.2
			Hoppe-Seyler's Zeitschrift für physiologische Chemie	60	55.3
			Journal of General Physiology	52	61.4
			Faraday Society, London. Proceedings	25	64.3
			Deutsche chemische Gesellschaft. Bericht	23	67.0
			Carlsberg Laboratoriet, Copenhagen. Comptes Rendus	17	69.0
Metabolism of proteins and amino acids	92	735	*Hoppe-Seyler's Zeitschrift für physiologische Chemie*	129	17.5
			Journal of Biological Chemistry	120	33.9
			Biochemische Zeitschrift	117	49.8
			Biochemical Journal	50	56.6
			Archives of Internal Medicine	27	60.3
			Klinische Wochenschrift	24	63.5
			Archiv für experimentelle Pathologie und Pharmakologie	22	66.5
			Archives of Internal Medicine	20	69.2
Chemistry of carbohydrates and the glycosides	65	565	*Deutsche chemische Gesellschaft. Bericht*	144	25.5
			Chemical Society, London. Journal	78	39.3
			American Chemical Society. Journal	74	52.4
			Journal of Biological Chemistry	47	60.7
			Justus Liebig's Annalen der Chemie	28	65.7
			Helvetica Chemica Acta	24	69.9
			Biochemical Journal	22	73.8
			Biochemische Zeitschrift	21	77.5
			Nature	15	80.2
			U. S. Bureau of Standards. Journal of Research	14	82.6
			Académie des Sciences, Paris. Comptes Rendus	13	84.9
Vitamin chemistry	229	1,653	*Biochemical Journal*	229	13.8
			Journal of Biological Chemistry	137	22.1
			Nature	99	28.1
			Lancet	66	32.1
			Hoppe-Seyler's Zeitschrift für physiologische Chemie	66	36.1
			Journal of Nutrition	53	39.3
			Helvetica Chemica Acta	49	42.2
			Klinische Wochenschrift	48	45.1
			Biochemische Wochenschrift	43	47.7
			Deutsche chemische Gesellschaft. Bericht	42	50.2
Enzyme chemistry	47	723	*Hoppe-Seyler's Zeitschrift für physiologische Chemie*	207	28.6
			Biochemische Zeitschrift	161	50.9
			Biochemical Journal	97	64.3
			Journal of Biological Chemistry	59	72.5
			Die Naturwissenschaften	22	75.5
			Nature	22	78.5
			Journal of General Physiology	18	80.9
			Deutsche chemische Gesellschaft. Bericht	16	83.2
			Fermentforschung	14	85.1

TABLE 3—*Continued*

Subject	Total Number of Periodicals	Total Number of References	Leading Journals	Number of References	Cumulative % of References
Nutrition	127	613	*Journal of Nutrition*	99	16.2
			Journal of Biological Chemistry	70	27.6
			American Journal of Physiology	62	37.7
			Society for Experimental Biology and Medicine. Proceedings	29	42.4
			Science	21	45.3
			American Medical Association. Journal	18	48.8
			Journal of Agricultural Research	15	51.3
			American Journal of Diseases of Children	12	53.2
			Chinese Journal of Physiology	12	55.1
			Klinische Wochenschrift	12	57.0
			Société de Biologie, Paris. Comptes Rendus	12	58.9
Hormone chemistry	108	1,288	*Society for Experimental Biology and Medicine. Proceedings*	163	12.7
			American Journal of Physiology	135	23.1
			Société de Biologie, Paris. Comptes Rendus	75	28.9
			Journal of Biological Chemistry	68	34.2
			Archiv für experimentelle Pathologie und Pharmakologie	63	39.2
			Klinische Wochenschrift	61	43.9
			Journal of Physiology	60	48.6
			Endocrinology	57	53.1
			Journal of Pharmacology and Experimental Therapeutics	35	56.0
			Biochemical Journal	35	58.9

Stevens[17] how styles have changed in research interests in the field of botany. They change for other sciences as well. The editorial policies of journals also change. Hence, even though the leading journals for a given subject are reliably determined at the time the literature is analyzed, the evaluation should be looked upon as only tentatively useful. The great similarity of the lists compiled for the medical sciences by Jenkins,[11] Sherwood,[16] and Gregory[4] over a period of seven years suggests that for broad fields such lists may be valid for a least a decade or more.

One interesting fact shown conclusively by several studies is that the primary interest of scientific readers is in the current literature. Sherwood[16] reported that 55 per cent of the citations are to publications of the current five-year period and that 75 per cent are for the current ten-year period. Jenkins[11] reported that, "There were 7.1 times as many references to periodicals of the last decade as to those of the one preceding it," and pointed out the important bearing this has on the buying policy of the library. An analysis of 2479 citations tabulated from the *Journal of Biological Chemistry* and *Hoppe-Seyler's Zeitschrift für physi-*

*ologische Chemie** gave for biochemistry percentages similar to those of Sherwood, 46 per cent and 69 per cent, respectively, for the current five- and ten-year periods.†

An interesting characteristic of the periodical lists prepared by Jenkins,[11] Mengert,[15] Gregory[5, 6] and others who use the statistical approach, is that a very high percentage of the references is concentrated in a small percentage of the periodicals. Gregory[5] has shown this quite

TABLE 4

The interdependence of biochemistry and other sciences as shown by an analysis of the bibliographical citations in the *Annual Review of Biochemistry*, vol. I–IV (1932–1935). The subjects are arranged in the order of their importance for the literature of biochemistry

Subject	Number of Journal Titles	% of Total	Number of Citations	% of Total
Biochemistry	14	2.1	4,528	33.9
Medicine	233	34.8	2,365	17.7
Physiology*	38	5.7	2,086	15.6
Chemistry	42	6.2	1,513	11.2
Biology†	39	5.8	800	6.0
Science (General)	44	6.6	577	4.3
Botany‡	29	4.3	328	2.5
Agriculture	77	11.5	282	2.1
Technology	36	5.4	238	1.8
Publications of Learned Societies (General)	22	3.3	220	1.7
Bacteriology and Immunology	7	1.1	192	1.5
Zoology	31	4.6	102	0.8
Physics and Mathematics	7	1.1	31	0.2
Miscellaneous (including unclassified)	50	7.5	98	0.7
Totals	669	100.0	13,360	100.0

* Including nutrition and endocrinology.
† Including a few general natural history journals.
‡ Including plant physiology.

clearly by some interesting comparisons. In general medicine and in endocrinology, 25 per cent of the significant periodical literature is to be found in three of the most important journals of the respective fields. In general medicine and in endocrinology of sex, only 17 journals are needed to supply 50 per cent of the most important literature, and in general medicine (Sherwood list) the fifty leading journals contain 70 per cent of the more significant scientific papers. From Tables 2 and 3 it can be seen that the same concentration is found in biochemical litera-

* The *Annual Review of Biochemistry* did not reflect this situation, as all the references are to current publications.

† Where the bibliographies in periodicals reporting original investigations are used for analyses to evaluate periodicals, this interest in current literature effects the value of the study. If the total number of citations to each periodical title is used, instead of the number for the most recent period only, the resulting list of periodicals may be quite misleading in respect to the relative importance of periodicals published *currently*. Cf. Gross and Gross (6), Tables I and III.

ture. Twelve journals contain 50 per cent of the most important papers in the field as a whole; and an even greater concentration is apparent for some of the special subjects. For example, more than half of the literature of enzyme chemistry is found in two German journals, and seven journals supply 85 per cent. For the small library with limited funds this concentration is encouraging information.

Conversely, it is discouraging to all libraries to note the very large number of titles through which the remaining significant literature is scattered. In his first 1800 references, Jenkins[11] found 305 periodicals cited. Within the bibliographies of the *Journal of the American Medical Association* for one year Sherwood[16] found references to 556 periodicals. Cunningham[2] reports that there are 2221 current journals in the medical and biological sciences. This dispersion of the literature is particularly disheartening among some of the specialties. Mengert[15] found citations to 325 journals in his analysis of the literature on the endocrinology of sex; and in this study of the periodical literature of biochemistry it was found that the current periodical publications on the chemistry of vitamins are scattered through 218 or more scientific and technical journals. It is this situation which makes the *Annual Review of Biochemistry, Physiological Reviews,* and other such publications imperative.

One of the interesting results shown by several studies is that the specialized journal for a given field is not necessarily the most important. For example, Gregory[5] shows that for endocrinology, the two most important journals are the *American Journal of Physiology* and the *Comptes Rendus de la Société de Biologie,* with *Endocrinology* being ranked third. In the Mengert study of the endocrinology of sex, *Endocrinology* ranks eighth with the *American Journal of Physiology,* the *Comptes Rendus de la Société de Biologie,* the *Proceedings of the Society for Experimental Biology and Medicine, Anatomical Record, American Journal of Anatomy, Journal of Experimental Zoology, and Archiv für Gynäkologie* being ranked as more important, although the last two are about on a par with the specialized journal.

In the study of the periodical literature of biochemistry the same sort of situation was not found to be true, because of the existence of four well established journals in this field. But in spite of these four large specialized journals, and several others of less importance, a surprising proportion of the significant current literature is found in journals of general chemistry or in journals devoted primarily to other subjects.

The expression, "devoted primarily," is used carefully, for one of the important facts shown by these bibliographical studies is the extent to which the journal literature demonstrates the interrelationships of the sciences. It is indicated in the information about the journals most significant for endocrinology, and it is especially clear in the results of the analysis of the periodical literature of biochemistry. Data presented in

Table 4 demonstrates clearly the extent to which the biochemist must use the literature of many other subject fields, as well as the fact that biochemistry is of importance as a related subject to many kinds of specialists. The principal subject of each journal was determined by ascertaining the Library of Congress classification number in the library catalog at the University of Chicago, or in the depository catalog at that institution. In some cases, when titles appeared in neither of these catalogs, classification was otherwise determined.

The results of this and other such studies seem to make a definite contribution to the problem of selecting periodicals for the library; but also implicit in them is information of value in library administration. The objective data concerning the degrees of concentration and dispersion of the literature of particular subjects and the reflection in scientific literature of the interdependence of the sciences may prove especially useful in the determination of policies for the organization of subject departments and departmental libraries or for bringing together those already established.

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A PROJECTED *BIBLIOGRAPHIA PHYSIOLOGICA**

By John F. Fulton, M.D.

Among bibliophiles and bibliophilic institutions there has been a growing interest in the art of bibliography. I refer deliberately to the "art" rather than to the "science," because bibliography, like technical librarianship, cannot satisfy scholarly needs unless to the rule of thumb is added the technique of making information available. This latter ability of the successful bibliographer may merely involve a sense of artistic values in typography; but it generally involves far more: especially the capacity for brief annotation and interpretation. But far more important than all these is the inescapable fact that a *bibliographer, to discharge his responsibility adequately, must know what is in the book he is describing and how it relates to the history of ideas in the field to which it belongs.* Without this special knowledge a bibliographer becomes merely a "bibliomechanic" or "bibliometrician"; he transcribes the title, often in unnecessary detail, he measures and counts the gatherings and the pages, but without some knowledge of the contents of the book with which he deals he can never win for himself the honorable title of "bibliographer."

I realize that there are many[1] who do not share this opinion and who, with the *Oxford English Dictionary*, proclaim that bibliography has only to do with the description of the physical characteristics of a book, never with the contents. Although this general definition has been quoted by many distinguished bibliographers, they have by their published works uniformly belied their own definition and they have belied it in direct proportion to their distinction as bibliographers!

One can recognize two movements in modern bibliography, one the growth of the personal bibliography,[2] the other the bibliography of special subjects. The personal bibliography has attracted somewhat wider attention within the past few years—at least among bibliophiles—than has subject bibliography. One can think of many distinguished examples, particularly those gay and attractive bibliographies of Dr. Geoffrey Keynes of London, his John Donne,[3] Sir Thomas Browne,[4] Jane Austen,[5] Blake,[6] Hazlitt,[7] Pickering,[8] Harvey,[9] and more recently John Evelyn.[10] There have also been many bibliographies of modern novelists, and poets. One of the finest of the personal bibliographies is that of the sixteenth century

* Read at a symposium on Medical Literature at the Fortieth Annual Meeting of the Medical Library Association, Boston, June 29, 1938. From the Laboratory of Physiology, Yale University School of Medicine, New Haven.

surgeon, Ambroise Paré, recently issued from the New York Academy of Medicine by Miss Janet Doe.[11] This is at once an accurate bibliography, replete with useful detail, and at the same time, like those of Geoffrey Keynes, it is a humanistic document, giving a wealth of information concerning the man, his work, his printers, and his historical contemporaries. One also finds fair indication of the principal contents of the works described. The personal bibliography, when developed on lines such as these, will continue to be well received and widely encouraged.

The subject bibliography is old, and yet in the modern humanistic spirit of bibliography, it is something quite new. There have been subject bibliographies since the days of the earliest printers, and certainly since the time of Lecoq[12] and of those inveterate Dutch bibliographers, van der Linden[13] and Cornelis à Beughem,[14] who first classified the incunabula,[15] issued separate bibliographies on history, physics, medicine, etc. Dibdin referred to Beughem as a man of "wonderful mental elasticity." Like Lecoq, he was a trail blazer, widely informed and versatile, his only fault being that he attempted more than he could successfully execute.

In the eighteenth century also there were subject bibliographies, most notable among them being the magnificent compilations of Albrecht von Haller. These I have already described elsewhere.[2] In the nineteenth century there were many subject bibliographies dealing with art, science, with bibliography itself, and with many other branches of learning, but there were curiously few bibliographies of the larger branches of learning. There are still no bibliographies, for example, of geology, astronomy or botany, and until the compilation of Riccardi[16] there was nothing in the field of mathematics. Electricity, as a special subject, early attracted the attention of the bibliographers, and yet there is at the present time no really adequate bibliography of electricity apart from those compiled by a distinguished London bookseller. I am not forgetting the splendid catalogue of the Wheeler gift collection in the Library of the American Institute of Electrical Engineers (New York),[17] but this is scarcely a bibliography of electricity. The need for such a bibliography for bibliophilic purposes, adequately annotated from the standpoint of the history of ideas, is keenly felt, not only among educators, but in every library that makes a pretense of serving the public in these times of increased historical consciousness.

This is not the place to stress the distinction between a catalogue and a bibliography. There are, to be sure, many *Bibliothecæ* such as those of Riccardi on Italian mathematics,[16] and of Casey Wood on vertebrate zoology[18] which are akin to exhaustive bibliographies. A special *Bibliotheca* such as Riccardi's, may comprise a virtually complete collection of a special subject. In this case the published catalogue becomes in fact a bibliography. The proposal which I am about to describe has reference, not to a *Bibliotheca physiologica* such as the Osler Catalogue in the field

of medicine,[19] but a *Bibliographia physiologica.* For nearly 20 years I have been collecting the world literature of physiology. The collection is extensive, but by no means complete. I do not expect to issue a catalogue of the collection, but rather to make it the basis of a special bibliography for which information will be gathered from every library that may have relevant information. The project is therefore a much wider one than would be embraced by a simple catalogue, and in thus venturing to lay the plan before you, I am hoping to enlist your interest and coöperation, as well as your constructive criticism. I would like to have free expression of opinion now or later through correspondence, of the plan both in relation to its general scope and in regard to specific bibliographical details.

GENERAL SCOPE

The functions of the human body have invited the attention of the human mind since prehistoric times; phases of physiology such as the gushing of a cut artery were portrayed in the art of several primitive civilizations. The earliest written document of physiological import is the Edwin Smith Papyrus. Here it was recorded that the pulse was counted and from its rate and other characteristics the state of the health of the individual inferred; the effects of cerebral and of spinal injury are also described. Many other documents from ancient times might be cited in connection with physiological history. In compiling a bibliography of such material, especially of classical texts, the bibliographer must use the art of selection. He obviously cannot list all the incunabula editions of Pliny's *Historia naturalis,* nor would it be judicious to give an exhaustive bibliography of Galen's *De usu partium.* The modern student needs rather information concerning the manuscript sources of these authors, the *editio princeps* and the best modern critical texts and modern translations. It would, I repeat, serve no useful purpose to list the innumerable editions of classical texts, especially when these editions add nothing to the knowledge of the text itself. The attempt will be made, however, to include the relevant works of every classical writer who has contributed in any way to physiological knowledge. The list incidentally would be a fairly long one, for it would include not only well known names, such as Galen, Herophilus, Erasistratus, Aristotle, Celsus, etc., but many lesser names, Paul of Ægina, Ætius and literary works such as those of Aristophanes, Homer, Horace and others, who incidentally recorded physiological facts of major significance. The original source will be given in these instances with appropriate and brief annotation.

In approaching modern times we will find a varied list of names from the Renaissance period, beginning with the army surgeons, Henri de Mondeville, Guy de Chauliac, John of Vigo, and, of course, Ambroise Paré, and in another sphere great names such as that of Leonardo da

Vinci who first described the ventricles of the human brain, and who gave the first accurate interpretation of the valves of the heart and their function. Again, with such writers our bibliography would give the *editio princeps,* with information concerning the manuscripts, where these exist, and the best modern critical texts and translations.

In turning to the later period technical bibliographical descriptions assume a much larger importance. Thus in dealing with the works of Robert Boyle we must record the successive editions and refer to their significant textual changes. A similar problem would arise in the case of William Harvey. Obviously no one collector would ever be able to bring together all the relevant information for the whole sphere of physiology in a single personal collection. Information must be drawn from widely different sources and it is for this reason that I wish to enlist your active support.

SPECIFIC DETAILS

The details of the bibliographical entries can now be taken up and a few words may be said concerning the scope of annotations.

The entry. How much is to be included in each citation? Will books of all periods be treated similarly? These are questions which must be settled and freely discussed before embarking upon such an enterprise. Those who use bibliographical sources continuously soon become aware of the virtues and shortcomings of a specific bibliography. The *Bibliotheca Osleriana,*[19] for example, admirable though it is in its unfailing accuracy, fascinating annotations and original arrangement, is distracting to a bibliophile in one particular respect, namely, that it does not include pagination. There is no way of telling from a given entry in the Osler catalogue whether one is dealing with a two-page pamphlet or a thousand-page treatise unless, as is often the case, it happens to be mentioned in the annotation. This serious shortcoming in a great catalogue arose from the fact that a set of library rules was imposed on the editors against their better judgment—the Bodleian Library had never indicated pagination in its catalogue and why therefore should Sir William Osler do so in his? I mention this in a pointed manner to emphasize the hazard of being limited by arbitrary rules. Members of the American Library Association are also exposed to the dangers incident to working by rule instead of principle, tending to be arbitrary and applying the same rules to books published in the sixteenth century as to those of the nineteenth. A special bibliographer covering the period from the fifteenth century to the present time would easily fall into a similar error if he attempted to treat books of widely different periods in the same manner. A few general principles, however, may be set forth as a basis for discussion.

The entry will begin with the full name of the author, followed by his dates, book titles need not be given in full, but all omissions in

transcription will be accurately indicated, and the title transcribed in sufficient detail: (i) to distinguish the book from any other with a similar title; (ii) to indicate its contents as fully as possible. Then will follow the publisher's place and name, date, size, and finally, the total pagination; figures and plates, if any, are to be indicated after the manner of the *Index catalogue of the Surgeon General's Office*. Notes will be appended in small print, in which the particular importance of the book or paper in the history of physiology will be stated together with other details of scientific and bibliograhical interest. Examples of such entries are as follows:

ASELLI, Gasparo (d. 1626)

*De lactibus sive lacteis venis . . . *Milan, G. B. Bidelli,* 1627. 4°: 4 *ll.,* 2 pl., 1 *l.,* 2 pl., 3 *ll.,* 79 [1] pp., 4 *ll.*

The announcement of the discovery of the lacteals. This, the first edition, contains four colored plates, engraved title and engraved portrait of the author, both by C. Bassano. The woodcuts are in colored chiasoscuro, four colors being used; they are the earliest anatomical illustrations printed in colors. The F copy is from the Libraries of Fabri de PEIRESC and Jean Paul MARAT. At the foot of the historiated title-page is a peculiar and characteristic ownership mark of Nicolas Fabri de Peiresc, the famous contemporary patron of science. This cachet was deliberately constructed to prevent imitation or erasure and it shows through the page; it was identified by a previous French owner about the middle of the 19th century.

BOYLE, Robert (1627-91)

*New experiments physico-mechanicall, touching the spring of the air . . . made . . . in a new pneumatical engine. *Oxford, H. Hall,* 1660. 16 *ll.,* 389 [1] pp. ("399," 90-99 omitted), 1*l.,* 1 pl.

In this, Boyle's first scientic work, he "proved that the air had weight and that the film of this gas normally surrounding the earth would support a column of 29 in. of mercury; when compressed to half its volume, it supported a column twice as high. Expressed in more general terms the volume occupied by the gas is reciprocal of its pressure. This law, which still passes under Boyle's eponym, was enunciated in 1662 in the second edition of his book; in the same work he tells of many interesting experiments on animals in which he had found that, if a candle were inserted along with a mouse in his exhaustion chamber, the mouse died and the candle went out almost simultaneously as the air was gradually withdrawn. This for the first time gave scientific proof of the statement made by Leonardo da Vinci many years before, and it also proved that *the animal and candle depended upon the air itself,* and that the two were not extinguished merely because of the accumulation of 'fulinginous vapours' incident to combustion."

SHERRINGTON, Charles Scott (1857-)

*The integrative action of the nervous system. (The Silliman Lectures.) *New York, Charles Scribner's Sons,* 1906, xvi, 411 pp.

The first edition and first issue of the great modern classic on the functions of the nervous system, Sherrington's book has been described as the "De motu cordis" of the nervous system, being comparable in importance with the great treatise of

* An asterisk preceding an entry indicates that the volume in question is possessed by the compiler.

William Harvey. It has been 12 times reissued by Scribner's and the Yale Press, each time with a new date on the title, but has never been revised, and the plates are now (1938) worn out. It has been out of print since May, 1930.

Journal citations in the bibliography will be made in accordance with the conventions used in *A world list of scientific periodicals*[20] which is the only compilation giving *all* periodicals likely to be encountered in a medical library or medical journal office.[21]

Arrangement. After much thought it has seemed to me essential to adhere strictly to an alphabetical arrangement, rather than to classify by subjects or to adopt chronological sequence. Sir William Osler, as you no doubt know, made a compromise in his catalogue,[19] subdividing his collection into several groups, one which he called *Bibliotheca prima* was arranged chronologically. At a glance one could see the foremost names in the order of their historical sequence. Lesser names were arranged alphabetically in his *Bibliotheca secunda.* Other sections were *Bibliotheca litteraria, Bibliotheca historica,* etc., and such subdivision has caused certain authors to appear in three or four sections of the catalogue, but the difficulties incident to this arrangement were met by the inclusion of a full index. For a bibliography such subdivision of materials seems undesirable. The works of a given author, when these are numerous, will however be arranged in chronological sequence to allow one to scrutinize the development of a particular individual's scientific ideas.

Typography. One of the foremost problems which confront the compiler of a bibliography is the choice and arrangement of type. In planning a *Bibliographia physiologica* I have examined many bibliographical compendia and I should like to direct your attention to six samples. The first is that of Cornelis van Beughem, *Bibliographia medica et physica movissima.* This, as you will see from the illustration (Fig. 1), is a simple alphabetical list, rather uninspired typographically and with little annotation. It is historically important because, as I have already indicated, this is one of the early subject bibliographies of medicine.

The next is a page from the remarkable bibliography of Riccardi's *Biblioteca matematica italiana,*[16] showing the full character of the bibliographical descriptions, the excellent form of collation, and the attractive choice of type for the annotations (Fig. 2). The third example is from the Osler catalogue,[19] an easily read page, attractive typographically, and a business-like production from the printer's standpoint, *i.e.,* no waste space and annotations well set off from bibliographical entries (Fig. 3). An interesting contrast to the Osler catalogue is that of Casey Wood's *Introduction to the literature of vertebrate zoology*[18] also printed by the Oxford Press. No bold face has been used in the Osler format, whereas it has been freely used in Casey Wood's (Fig. 4). There is no doubt that the bold face helps the eye, but it seems somewhat too bold in relation to the type face used for the entries. A sumptuous biblio-

BIBLIOGRAPHIA MEDICA & PHYSICA

Novissima : Perpetuo Continuanda

sive

CONSPECTUS PRIMUS

Catalogo Librorum Medicorum Chymicorum. Anatomicorum, Chyrurgicorum, Botanicorum ac & Physicorum, &c.

Quotquot Currente hoc Semisæculo, id est ab Anno Reparatæ Salutis 1651. (inclusive) per universum Europam, in quavis Lingua,

ORIENTALI tum GRÆCA, LATINA, GALLICA, HISPANICA, ITALICA, ANGLICA, GERMANICA & BELGICA,

Aut Novi aut Emendatiores & Auctiores Typis prodierunt.

Undique acquisitis subsidiis elaborata & adornanda

Opera ac studio

CORNELII à BEUGHEM Embricensis.

AMSTELÆDAMI,

Apud *Janssonio-Waesbergios*, 1681.

corum. In quo ultimo millia circiter Authorum Chimicorum vel de Transmutatione Metallorum, re Minerali, & Arcanis, tam Manuscriptorum, quàm in lucem editorum, cum eorum editionibus, usque ad annum 1643 continentur. Cum ejusdem Bibliothecæ Appendice & Corollario. *Parisiis* 1654. in 13. *Heidelb.* 1656. in 12.

De Unguento Armario. Extat cum Theatro Sympathetico variorum Authorum. *Norimbergæ* 1662. in 4.

Hortus seu Armamentarium simplicium Mantarum & Animalium, ad Artem Medicam spectantium, cum brevi eorum etymologia, descriptione, loco, tempore & viribus. *Cassiis* 1667. in 8. *Paris.* 1669. in 8.

Historiarum, & Observationum Medico Physicarum Centuriæ IV. rarâ stupendâ & insuditâ. Accesserunt Ilusci Cæteri obsequiones raræ Borello communicatæ, cum vita Penati Castelli, eodem Borello authore. *Castris* 1653. in 12. *Parisiis* 1656. in 8. *Francof.* 1670. in 8.

Eadem tertiâ quibus accesserunt Joan. Rhodii, Arnoldi Botli & Petri Matthiæ Rodii Observationes Medicinales. *Lipsiæ* 1676. in 8.

OLAUS BORRICHIUS De Ortu & Progressu Chymiæ dissertatio. *Hafniæ* 1668. in 4.

Lingua Pharmacopœorum, sive de accurata Vocabulorum in Pharmacopoliis usitatorum pronunciatione. *ibid.* 1698. in 4.

Hermetis Ægyptiorum & Chymicorum sapientia ab Herm. Conringii Animadversionibus vindicata. *ibid.* 1674. in 4.

Doctrinæ Metallica clarè & compendiariò tradita. *ibid.* 1677. in 4.

Ejus Observationes, extant in Actis Acad. Naturæ Curios. Germaniæ. Tom. I. & III.

Disputat. de Scorbuto Resp. Joh. Melch. Sa'nero. *ibid.* 1675.

Alias

Alias ejus Observationes exhibet Thom. Bartholin. in Actis Medicis & Philosophicis Hafniensibus. Vol. I. II. III. IV.

FRANCISCUS BOSELLUS Amalthæum Medico-Practicum alii Historicum. *Parisiis* 1665. in 4.

JOANNES ANDREAS BOSIUS Dissertatio Historica de Clinicis veteris Ecclesiæ. *Jenæ* 1679. in 4.

LEONARDUS BOTALLUS De Curatione per sanguinis missionem liber. De incidendæ venæ, cutis scarificandæ, & hirudinum affigendorum modo. *Lugduni* 1649. in 8.

Opera Omnia Medica & Chirurgica è Musæo Joannis van Horne. *Lugd. Bat.* 1660. in 8.

JOANNES BOUDINIUS De Salubritate agri Romani restituendo. *Forocratia* 1667. in 4.

FRANCISCUS BOURCHARDUS ejus observationes extant in Actis Acad. Naturæ Curios. Germaniæ. Tom. III.

. . . . BOXBERGERUS Francofurtensis Methodicæ Medicinales. *Bambergæ* 1677. in 12.

ROBERTUS BOYLE Nova Experimenta Physico-Mechanica de Vi aëris elastica, & ejusdem effectibus, facta maximam partem in Nova Machina Pneumatica, & ad (Nepotem suum) Nobilissimum D. Carolum Vice comitem de Dungervan literis prædem transmissa. Ex Anglico in Latinum novitèr conversa. *Oxonii* 1661. in 8. *Hagæ-Comit.* 1661. in 12. *Rotterd.* 1669. in 12. Et in Operibus variis Genevæ 1677. in 9. impressis N. 1.

Defensio doctrinæ de Elatere & Gravitate Aëris propositæ à Dn. Rob. Boyle, in novis ipsius Physico Mechanicis experimentis adversus objectiones Francisci Linl. Ubi etiam Objectoris Funicularia Hypothesis examinatur, eique occasione quorundam experimenta addentur. Ab Autore supra-dicto-

rum

FIGURE 1

BIBLIOTECA
MATEMATICA ITALIANA

DALLA ORIGINE DELLA STAMPA AI PRIMI ANNI DEL SECOLO XIX

COMPILATA

DAL

DOTT. ING. PIETRO RICCARDI

PROFESSORE DI GEODESIA TEORETICA NELLA R. UNIVERSITÀ

DI MODENA

E SOCIO DELLA R. ACCADEMIA

DI SCIENZE, LETTERE ED ARTI DI QUESTA CITTÀ

MODENA

TIPOGRAFIA DELL' EREDE SOLIANI

MDCCCLXX

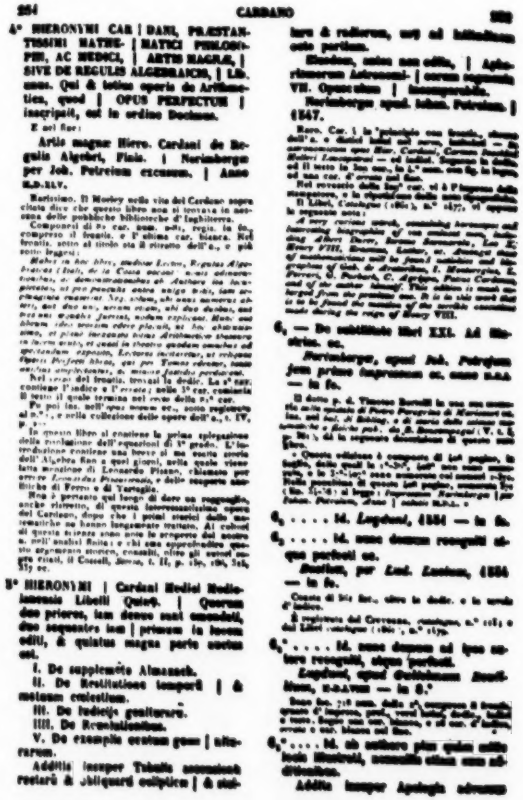

FIGURE 2

BIBLIOTHECA OSLERIANA

A CATALOGUE OF BOOKS ILLUSTRATING

THE HISTORY OF MEDICINE AND SCIENCE

COLLECTED, ARRANGED, AND ANNOTATED

BY SIR WILLIAM OSLER, BT.

AND BEQUEATHED TO McGILL

UNIVERSITY

OXFORD : AT THE CLARENDON PRESS

MCMXXIX

ECCLESIASTES.

4766. The Book of Ecclesiastes. A new metrical Translation with an Introduction and Explanatory Notes by Paul Haupt. 1a. 8°. *Baltimore*, 1905.

'Polychrome edition' (but not pr in colours; cf no 69).

I have kept this, which Haupt gave me, for the famous allegory in § viii [ch xii in the Authorized Version] and its interpretation. Haupt was much surprised when I pointed out that old Laurentius has the interpretation (' Discours de la conservation de la vue . . . et de la vieillesse ', 1598, p. 403; English trl., 1599, p. 173). W. O.

4767. *The same.* A Gentle Cynic, being a Translation of the Book of Koheleth, commonly known as Ecclesiastes, stripped of later additions. Also its Origin, Growth and Interpretation. By Morris Jastrow, Jr. . . . 8°. *Phila. &c.*, 1919.

Pres. copy. Inserted : a review

SMITH (JOHN) 1630–79.

4768. The Pourtract of Old Age. Wherein is contained a Sacred Anatomy both of Soul, and Body . . . Being a Paraphrase upon the Six former Verses of the 12. Ch. of Eccl. Ecclesiastes. By John Smith, M.D. The 2nd ed. corrected. sm. 8°. *Lond., pr. by J. Macock, for H. Kathby*, 1676.

With folding table. An attempt is made to prove that Solomon knew of the circulation (see note to no 785).

The title of the 1st ed., 1666, is ' Dynamis flambeau : King Solomon's portraiture of old age '. A 3rd ed. appeared in 1752. Smith was a Hunterian from (D. S. B.) W. O.

ELIGIUS (St.) Bp. of Noyon. c. 588–659.

4769. Les Miracles de Saint Éloi, Poème du XIII^e^ siècle. Publié pour la première fois d'après le manuscrit de la bibliothèque bodléienne d'Oxford. Et annoté par M. Peigné-Delacourt. 1a. 8°. *Nouvelle &c.*, [1859].

Illustr. An inscription by the editor is dated 31 a. 1850, which is probably the year of publication; the Bodleian copy was received in 1860.

ELIOT (GEORGE) pseud. [Mary Ann Evans, Mrs. Cross] 1819–80.

4770. Middlemarch. A study of Provincial Life. By George Eliot. 4 vols. 12°. *Edinb. &c.*, 1871–2.

1st in 2 vols.

Ask the opinion of a dozen medical men upon the novel in which the doctor is best described, and a majority will say ' Middlemarch '. Lydgate is at once an example and a warning. He illustrates an attempt to break tradition and custom in a provincial town by doing general practice and yet not dispensing drugs. " This was offensive both to the physicians whose exclusive distinction seemed to be imaged on, and to the surgeon-apothecaries with whom he ranged himself " (ch. 15). He was well born, well bred and well trained, and " above his ordinary bearing there was a certain fling, a fearless expectation of success, a confidence in his own powers and integrity much fortified by contempt for petty obstacles or seductions, of which he had no experience " (ch. 13). Chapter 15 is a fine description of a man of the highest type, whose scientific interest took the form of professional enthusiasm, and who had a burning conviction that the medical profession was the finest in the world. Then, too, he had " a flesh-and-blood sense of fellowship ", and " cared not only for " cases " but for John and Elizabeth, especially Elizabeth ".

The warning in his case in point—not to marry a fool with a pretty face! We follow his wonderful career with pathetic interest. An unmerited calamity, his marriage ruined his intellectual life to a soul-wasting struggle with worldly annoyances. " He once called her his basil plant : and when she asked for an explanation, said that basil was a plant which had flourished wonderfully on a murdered man's brains." Would that the Lydgates existed only in fiction!

George Eliot was happy in her relations with the profession, and we owe her a deep debt for the early Victorian sketch of it in a provincial town.

It is often said that my brother Regius of Cambridge, Sir Clifford Allbutt, was the original of Lydgate. Nothing in their careers is in common save the training and the high aspirations in a provincial town. There is a basis for the statement. When Dr. Bastian lived at Hanwell, on a Sunday afternoon he had just returned from a visit to George Eliot, and the conversation turned on ' Middlemarch ' which had appeared recently. He said that the matter had been discussed at the house that afternoon, and the conclusion that Sir. Allbutt's early career at Leeds had given her suggestions. [W. O.]

ELLIS (WILLIAM HODGSON) 1845–1900.

4771. Wayside Weeds. 12°. *Toronto*, 1914.

Poems. With portr. Introduction by Maurice Hutton. Ed. by J. M. and J. J. M.

Ellis was professor of chemistry at Toronto.

ELYOT (Sir THOMAS) 1490?–1546.

4772. [Of the Knowledge [sic] whiche maketh a wise man.] sm. 8°. [*Lond., by and T. Berthelet*, 1533.]

The author's name occurs in the heading of the ' Preface ', not on the title-page. A-C^8^ D^6^ ; the 2 red leaves, the last unnumbered ' 101 ' and A 1 letter. Four leaves are missing : the title and A 8 (both supplied in photograph from the Bodleian copy), A 7 (supplied in MS.) and A 6 (blank).

Noted in the Short-Title Catal. (no. 7636).

A letter to Lady Lisle, mentioned in the D. N. B. as appended, is not here, nor in any of its 8 issues or the B. M. The 2nd ed. (A-C^8^ ; 112 leaves) with title ' Of that knowledge . . . A dyscourse [' Dyalogue '], has no date stamped in the title, which is cut border (cf. no. 4772), and was not printed before

FIGURE 3

AN

INTRODUCTION TO THE LITERATURE

OF

VERTEBRATE ZOOLOGY

BASED CHIEFLY ON THE TITLES IN THE

BLACKER LIBRARY OF ZOOLOGY

OF EMMA SHEARER WOOD LIBRARY OF ORNITHOLOGY

THE BIBLIOTHECA OSLERIANA

AND OTHER LIBRARIES OF

MCGILL UNIVERSITY, MONTREAL

COMPILED AND EDITED

BY

CASEY A. WOOD, M.D., LL.D.

Director of Research of the Huntington Institution

OXFORD UNIVERSITY PRESS

LONDON: HUMPHREY MILFORD

1931

DANIELSSEN, D. C.
1863 *See* AMES, JOSIAH

DANMARKS FAUNA.
1827–38. Illustreret Haandbøger over den Danske Dyreverden, udg. af Naturhistorisk Forening. *illust.* Nos. 1–32. Copenhagen.

A detailed and complete critical description of the faunal life of Denmark, published under the auspices of the Royal Natural History Society. Each species is handsomely illustrated.

DANNEMANN, F.
1921. Plinius und seine Naturgeschichte, etc. *Jena.*

DANSKE-FOGLS bi-annual Organ for: **DANSK ORNITHOLOGISK CENTRAL VED F. SKOVGAARD.**
1930–*date.* 8vo. *illust.* Viborg.

The annual (?) publishing method is devoted to a study of the birds of Denmark and the Faroe Islands.

DANSKE VIDENSKABERNES SELSKAB. Copenhagen.
1917–*date.* Biologiske meddelelser.
1826–60. Selskabs Skrifter. Naturvidenskabelig Series 4.
1849–60. Selskabs Skrifter. Naturvidenskabelig Series 5.
1853–1906. Selskabs Skrifter. Naturvidenskabelig Series 6.
1906–14 15. Selskabs Skrifter. Naturvidenskabelig Series 7.
1915 17 *date.* Selskabs Skrifter. Naturvidenskabelig Series 8.
1814 *date.* Oversigt over . . forhandlinger.

DANSK NATURHISTORISK FORENING. Copenhagen.
1849 *date.* Videnskabelige.
1849–1912 as Naturhist. Forening i Kjöbenhavn.

DANSK ORNITHOLOGISK FORENING. Copenhagen.
1904 *date.* Tidskrift. Quarterly.

The Tidskrift is the principal contribution of learned publication in Denmark. It is not only the organ of the Danish Ornithological Society but includes proceedings and papers presented at its meetings, and also of the Danish Faunistic Society and such other societies as exist. It is the purpose of this publication to publish upon request in the periodicals named such articles (which may be made by the editorial staff). Illustrated papers in the Tidskrift on Prehistoric Bone by Sophus Bröndsted, Oskar Rosenfeld, Ingvar Anderson, Knud Jessen, Johannes Brøndsted, Gudmund Hatt, Therkel Mathiassen, Hans Glob, and a number of others.

DANZIG. Naturforschende Gesellschaft.
1760–86. Versuche und Abhandlungen. 1–3 all pub.
1778. Neue Versammlungen.
1830–63. Neuste Schriften, continued as
1863–*date.* Schriften. Neue Folge.

D'ARBERBE, Prince F.
1922. Les Pinnerons, etc. *pp. 156. 12 col. pl.* Paris.

DARBOT, G. *See* ARBLAY, C. I. e Feune, etc., 1905.

DARLUC, MICHEL [1717–93].
1782–6. Avignon: Histoire naturelle de la Provence. *3 vols. 8vo.* Avignon.

DARMSTADT. Naturhistorischer Verein . . . Hessen und Umgebung.
1847–8. Verhandlungen. 1–2 all pub.).

DARWIN, CHARLES ROBERT [1809–82].
1839. Narrative of the surveying Voyages of H.M.S. Adventure and Beagle between . . . 1826 and 1836. Philip King and others. *3 vols. in 4, 8vo. illust.* London.

One of the earliest publications relating to these famous Voyages. Two second accounts that have issued through many editions and have been translated into many foreign languages.

1839–43. The zoology of the voyage of H.M.S. Beagle, under the command of Captain Fitzroy, during the years 1832 to 1836. *5 vols. in 2. folio, pl.* London.

Later issues of this work entitled by Charles Darwin as well known to naturalists and as necessary to all students of zoological geology. A complete table of contents is given under Zoology of the Voyage, etc. 1839.

—— and **WALLACE,** ALFRED.
1858. On the Tendency of Species to form Varieties, etc. *8vo.* London.

A celebrated treatise, forerunner of the *Origin of Species.* See also WALLACE, ALFRED R., 1858.

1859. On the Origin of Species by means of natural selection. *8vo. pp. 10–502. 1 pl.* London.

This is the very rare 1st issue of the first edition to which the story of the long (p. 1x), afterwards suppressed, is given. The various libraries of Oxford have no less than eight different issues of the same one edition and numerous of this famous work.

1859. On the origin of species by means of natural selection. *8vo. pp. 10–502. pl.* London.

The so-called 2nd edition. Both the first impression and the first edition are now quite rare.

1859. Journal of researches into the natural history and geology of the countries visited during the voyage of H.M.S. Beagle round the world, under the command of Capt. FItzroy. *2 vols. 8vo. Vol. I. pp. viii–1)–211. 6 figs. T. of c. Vol. II. pp. 4–1)–7–224. 11 figs. T. of c. index.* New York.

A popular account of the voyage of the 'Beagle', in which references to some were frequently.

1868. The Variation of Animals and Plants under Domestication. *2 vols. 8vo. illust.* London.

An exceedingly interesting and well-known treatise by the great naturalist. A second edition appeared in 1875.

1871. The descent of man, and selection in relation to sex. *2 vols. illust.* London.

First edition of this much debated work.

1872. Expression of the emotions in man and animals. With photographic and other illustrations. *12mo. pp. vi+374. 1 pl. (3 fold.). 21 figs. T. of c. index.* London.

The printing of this classic shows the elaborate details in materials, illustrations, in both word, diagrams, and pictures, and the accuracy text.

1873. The expression of the emotions in man and animals. . . . With photographic and other illustrations. *8vo. pp. v+374. 1 pl. (3 fold.). 21 figs. T. of c. index.* New York.

The American edition of the original published in London.

FIGURE 4

Bibliotheca Chemica:

A CATALOGUE OF THE ALCHEMICAL, CHEMICAL AND PHARMACEUTICAL BOOKS IN THE COLLECTION OF THE LATE JAMES YOUNG OF KELLY AND DURRIS, ESQ., LL.D., F.R.S., F.R.S.E.

BY

JOHN FERGUSON

M.A., LL.D., HONORARY MEMBER OF THE IMPERIAL MILITARY ACADEMY OF MEDICINE, ST. PETERSBURG
MEMBER OF THE GERMAN SOCIETY FOR THE HISTORY OF MEDICINE AND THE NATURAL SCIENCES
FOREIGN MEMBER OF THE SOCIÉTÉ FRANÇAISE D'ARCHÉOLOGIE
REGIUS PROFESSOR OF CHEMISTRY IN THE UNIVERSITY OF GLASGOW

VOLUME II

Glasgow
JAMES MACLEHOSE AND SONS
PUBLISHERS TO THE UNIVERSITY
1906

ROTHE (GOTTFRIED). *Continued.*

Acta Medicorum Berolinensia, 1721, Decas I. vol. i. p. 88.

Kurtze Anleitung zur Historie der Medicin-Gelehrsamkeit, 1731. pp. 799, 8vo.

Longlet Dufresnoy, *Histoire de la Philosophie Hermétique*, 1742. iii. p. 8 (well done, very concise, and the arrangement good).

Rotler, *Universal Lexicon*, 1746. xxxi. col. 1134.

Haurisare, *Methodus studii Medici*, ed. Haller 1751. i. p. 138., ii. pp. 638, 1039.

Jöcher, *Allgemeines Gelehrten-Lexicon*, 1751. iii. col. 2208.

Fuchsii, *Professor-Stein*, 1755. Th. ii. p. 126.

Baumer, *Bibliotheca Chemica*, 1760. p. 22.

Gmelin, *Geschichte der Chemie*, 1798. ii. pp. 680, 3.

Otto, *Lexicon der . . . Oberlausitzischen Schriftsteller*, 2 vols., Görlitz, 1800-01.

Gottlieb Friedrich Otto, *Lexikon der seit dem fortgehenden Jahrhundert verstorbenen und jetzt lebenden Oberlausitzischen Schriftsteller und Künstler*, Görlitz, 1803, iii. p. 67.

Reimer's *Journal*, vii.

Fuchs, *Repertorium der chemischen Literatur*, 1806-08, pp. 203.

Pfaffinger (J. Ludwig, *Geschichte der Apotheker*, 1812, pp. 373, 688.

Ersch-Gruber, *Biographisch-literarisches Handwörterbuch*, 1863, ii. col. 300.

ROTHEN SCHILDE (WIGAND VON).

See WIGAND VOM ROTHEN SCHILDE.

ROTH-SCHOLTZ (BENJAMIN).

See RIPLAY (GEORGE), Chymische Schriften, 1756.

The edition of Ripley's works contains also Artephius, Uebersetzer Hauge-Schlüssel, p. 109, and Das erfahrene Philosophische Vater-Hertz an seinen Sohn, p. 333.

The actual editor was Friederich Roth-Scholtz. He himself says: "I borrowed the name Benjamin from my "medela" brother, who is still (1732) living in Silesia, and for certain reasons employed it in the works of George Ripley, 8. Nürnb. 1768. Artephius . . . 8. Nürnb. 1717; . . . Vater-Hertz. 8 Nürnb. 1717. and Georg. Krumm. Basil's Fundamenta Chym. Pharmaceut. 8. Herrenstadt. 1781."

Will seems to think the name was fictitious and that there was no brother, but he has overlooked the following facts. Preface, p. 32. to the 1735 edition of Friederich's *Bibliotheca Chymica*, there are verses from Samuel Roth-Scholtzen, "seinem lieben Bruder zum Andencken," dated Herrenstadt den 10ten Sept. A. M.DCC.XXXIV. He is the third brother. Further, on p. 36, there is a passage in Greek from the Apocalypse, about the twelve gates of the city being twelve pearls, etc., added to him. "Fratrum optimus, for his sincere friendful pondering, to which is added the hymn dearer that he may be remembered in pouring out," ending later for his birthday. This is dated Trebnitz der 10ten Sept. An. M.DCC.XXXIV., and it is from his Lieutenant-"his commilitonem." Nothing more Roth-Scholtz. These can be, therefore, no question about the brothers.

ROTH-SCHOLTZ (FRIEDERICH).

Bibliotheca Chemica, oder Catalogus von Chymischen Büchern, darinnen man alle die jenigen Autores findet, die von dem Stein der Weisen, von Verwandlung der schlechten Metalle in bessere, von Bergwercken, von Mineralien, von Kräutern, von Thieren, von Gesund- und Sauer-Brunnen, von Warmen- und andern Badern, von der Haus-haltungs-Kunst, und was sonsten zu denen drey Reichen der Natur gehöret, geschrieben haben, und in der Roth-Scholtzischen Bibliotheque vorhanden seyn. Samt einigen Lebens-Beschreibungen berühmter Philosophorum ans Liecht gestellt. Nürnberg und Altdorff. Bey Johann Daniel Taubers seel. Erben. 1727.

8°. Pp. 14, 650. Title red and black. Frontispiece not included in the pagination.

The *Bibliotheca* was issued in five parts, which were afterwards collected in one volume with the general title given above. Each part has a separate title page, and parts iii. iv. and v. are accompanied respectively by portraits of Basilius Valentinus, Johann Friderich Helvetius, and Glauber Hervicheus. The contents are as follows:

Engraved title as frontispiece; p. [1] title, as above; p. [2] blank; p. 3. to the reader; pp. 4-14, contents of the book; Ehrenrettung der . . . Frauen Abelgunst; p. [1] title-page to the "Erster Theile" of the "Catalogus," dated 1709; text, p. 1-

p. [2] title-page to the "Zweyten Theiles," dated 1707; text, 32-96; portrait of Friedrich Roth-Scholtz; title-page of the "Dritten Theiles," dated 1707; text, 97-272; portrait of Helvetius; [unpaged] text, 99-272; portrait of Glauber; [unpaged] text, 273-650; p. [173] title-page of the "Vierten Theiles," dated 1708; text, 174-296. The fifth part is not paged in this copy. Its title-page, dated 1709, is on p. [1] of the fifth part, and is preceded by the portrait of Basilius Valentinus and is preceded by the portrait of Friedrich Roth-Scholtz; text runs from page to page, uninterrupted from 296 to the end, 650. At the end of the fifth part is the following publication: Nürnberg d. 1. Februar. MDCCXXVIII.

FIGURE 5

Cyclopædia Bibliographica:

A LIBRARY MANUAL OF

THEOLOGICAL AND GENERAL LITERATURE,

AND GUIDE TO BOOKS FOR

AUTHORS, PREACHERS, STUDENTS, AND LITERARY MEN.

ANALYTICAL, BIBLIOGRAPHICAL, AND BIOGRAPHICAL.

BY JAMES DARLING.

I—Z

LONDON:
JAMES DARLING, 21 GREAT QUEEN STREET, LINCOLN'S INN FIELDS

1854

2453

PRIDEAUX, Matthias, M.A.
Son of the preceding. Born 1622. Admitted of Exeter College 1640. Died 1648.
An easy and compendious introduction for reading all sorts of histories. Sixth edition, corrected and augmented. To which is added, a synopsis of the councils, by John Prideaux. 8°.
Oxf. 1682

PRIDEAUX, Walter, Esq.
Poems of chivalry, farry, and the olden time. 12°.
Lond. 1840

PRIEST, Isaac.
Presbyter of the Church of England.
A volume of sermons on ten different subjects. 8°.
Bristol, 1753
Ecclus. 18. 31, 32. Nature and morality of true repentance 1
Prov. 22. 18. Deceitfulness of sin, and sure reasons of virtue 38
Matt. 25. 10. Vigilance rewarded; or, the happy fate of the wise virgins 74
2 Kings, 5. 13. Cure of Naaman's leprosy, alluding to the two Sacraments 103
Matt. 6. 34. Sin and folly of a fallicious care 117
2 Pet. 3. 3, 4. Answer to some objections against the certainty of a future judgment 143
Rev. 20. 16. Christian sermon 160
Ezek. 37. 3. Ezekiel Sunday 181
1 John, 4. 1. Whit Sunday 203
Psa. 122. 6. Zeal for God's church and sanctuary, an inlet to prosperity 220

PRIESTCRAFT in perfection: or, a detection of the fraud of inserting and continuing this clause (The Church hath power to decree rites and ceremonys, and authority in controverfys of faith) in the twentieth Article of the Articles of the Church of England. Second edition, corrected. Pp. 49. 8°. *Lond.* 1710

The behaviour of the cl—gy, as well as their traditions, destructive of religion: or, a succinct history of priestcraft, throughout all ages. Dedicated to the most worthy sect of Free-thinkers. Second edition. F. 1. Pp. viii. 60. 8°.
Lond. 1731

PRIESTHOOD of Jesus Christ. A discourse concerning the Priesthood of Jesus Christ: in which the state, and order of his priesthood, as also the place, time, and manner of his performing the functions thereof, are distinctly considered. With a preface in vindication of the author of the Epistle to the Hebrews, occasioned by the misrepresentations of a late writer. Pp. xxiv. 149. 8°.
Lond. 1707

PRIESTHOOD. A vindication of the Christian priesthood: wherein the sacred order and office of bishops and their spiritual power and authority over the people and clergies, and the whole laity, is asserted and proved to be of divine institution, from express testimonies of the Holy Scriptures, and the Primitive Fathers: containing a full and short answer to all the cavils and objections of Dissenters and forbidders against the clergy of the Church of England. [On John, xx. 21, 22.] By a Presbyter of the Church of England. Pp. 68. 8°.
Lond. 1718

PRIESTLEY, Joseph, LL.D., F.R.S.
A learned Unitarian divine, and an eminent philosopher. Born near Leeds 1733. Educated at an academy at Daventry. First settled as a minister at Needham-Market, Suffolk, afterwards removed to Nantwich. Tutor

2454

PRIESTLEY, Joseph, LL.D., F.R.S. (continued).
in languages at Warrington Academy 1761. Minister at Leeds 1767. Librarian to the Earl of Shelburne 1773. Removed to Birmingham 1780. Joined the Antonites 1791. Died at Pennsylvania 1804. His theological and miscellaneous works were published collectively, 25 vol. 8°. 1817.
A delcription of a new chart of hiltory. Containing a view of the principal revolutions of empire that have taken place in the world. Seventh edition, corrected. Pp. 100. Index Pl. 2. 12°. *Lond.* 1769
A delcription of a chart of biography; with a catalogue of all the names inferted in it, and the dates annexed to them. A new edition, with improvements. Pp. 72. 12°.
Lond. 1790
A free addreſs to Proteſtant Diſſenters, on the ſubject of the Lord's Supper. Pp. 64. 8°. *Lond.* 1768
The theological repoſitory; conſiſting of original eſſays, hints, queries, &c., calculated to promote religious knowledge. 6 vol. 8°.
Lond. 1769; *Birm.* 1788
A view of the principles and conduct of the Diſſenters, with reſpect to the civil and ecclefiaſtical conſtitution of England. Second edition. Pp. 92. 8°.
Lond. n. d.
Letters to the author of Remarks on ſeveral late publications relative to the Diſſenters, in a letter to Dr. Prieſtley. Pp. 70. 8°. *Lond.* 1770
An eſſay on the firſt principles of government, and on the nature of political, civil, and religious liberty. Second edition, enlarged. 8°.
Lond. 1771
A letter to a layman on the ſubject of the Rev. Mr. Lindley's propoſal for a reformed Engliſh Church upon the plan of the late Dr. Samuel Clarke. [Anon.] Pp. 59. 8°. *Lond.* 1774
An examination of Dr. Reid's Inquiry into the Human Mind, Dr. Beattie's Eſſay on Truth, and Dr. Oſwald's Appeal to Common Senſe in behalf of Religion. Second edition. 8°.
Lond. 1775
A free diſcuſſion of the doctrines of neceſſitation and philoſophical neceſſity, in a correſpondence between Dr. Price and Dr. Prieſtley. 8°.
Lond. 1778
[On matter and ſpirit, and philoſophical neceſſity.] 2 vol. 8°. *Birm.* 1782
Vol. 1. Diſquiſitions relating to matter and ſpirit. To which is added the hiſtory of the philoſophical doctrine concerning the origin of the ſoul, and the nature of matter; with its influence on Chriſtianity, eſpecially with reſpect to the doctrine of the preexiſtence of Chriſt. Second edition, improved and enlarged. *Birm.* 1782
Vol. 2. The doctrine of philoſophical neceſſity illuſtrated, being an appendix to the diſquiſitions relating to matter and ſpirit. To which is added an anſwer to ſeveral perſons who have controverted the principles of it. Second edition, enlarged. *Birm.* 1782
Two letters to Dr. Newcome, on the duration of our Saviour's miniſtry. 8°. *Birm.* 1780.
A third letter, 1781.
A hiſtory of the corruptions of Chriſtianity. 2 vol. 8°. *Birm.* 1782
Tracts in controverſy with Biſhop Horſley. With notes by the editor. To which is annexed an appendix containing a review of the controverſy. 8°. *Lond.* 1815

FIGURE 6

graphical format is that used by John Ferguson in his *Bibliotheca chemica,*[22] but excellent though this bibliography is in so many respects, book titles are given in unnecessary detail, and the printer has made an unsuccessful attempt to use single and double columns on the same page (Fig. 5). The major bibliographical entries are set up across the entire page and the annotations follow below in double column. Few present-day printers could be persuaded to adopt such a compromise.

I come now to one of the least known, and, to me, one of the most satisfactory bibliographical compilations ever issued. I have reference to James Darling's *Cyclopædia bibliographica: A library manual of theological and general literature, and guide to books for authors, preachers, students and literary men. Analytical, bibliographical, and biographical,* published in London, in two volumes in 1854 and 1855.[23] A page from this great compilation is included in Fig. 6. The author's name is given in bold face then follows a brief biographical account and after that the principal writings which may also be annotated. Darling occasionally gives pagination of shorter tracts, but not consistently.

The bibliography of physiology is so far only a project—and this paper somewhat in the nature of a promissory note. I am not sure that any of us will live to see it completed; but before anything happens to any of you or to me, I want your counsel. Also when problems in the bibliography of physiological literature come to your notice, I hope you will not hesitate to write to me or to my librarian, Mrs. Peters. Such enquiries will help greatly to extend the usefulness of the bibliography.

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A NOTE ON *A WORLD LIST OF SCIENTIFIC PERIODICALS**

By John F. Fulton, M.D.

After presenting the paper appearing in this issue[1] before the Medical Library Association, it came to my attention that only a few of our members were familiar with that indispensable bibliographical tool, *A world list of scientific periodicals published in the years 1900-1933,* which has lately appeared in the second edition.[2] The *World List,* as it is generally called, is the only international† compilation that gives consistent abbreviations for *all* periodicals likely to be used by members of the medical profession. The abbreviations which have just been published in Volume 2, series 4, of the *Index-catalogue of the Library of the Surgeon-General's Office,* are consistent as far as they go, and they closely approximate *World List* abbreviations;‡ however, they embrace journals taken in one library, and do not extend into the fields of physics and chemistry which are so widely used nowadays by the medical profession. It seems essential, therefore, that medical journals in general, and especially those in America, adopt a uniform system of abbreviations which will not cause confusion in the world literature of medicine.

The abbreviations of the *World List* have been adopted by a large number of British journal offices, including those of *Lancet, British Medical Journal, Journal of Physiology, Quarterly Journal of Experimental Physiology, Brain, Proceedings of the Royal Society* (Series A and B), *Philosophical Transactions of the Royal Society,* and by many continental journals, especially those in Belgium and Holland; but it has gained slow recognition in this country, although its English publishers, characteristically, have not advertized it here. The newly founded *Journal of Neurophysiology* has adopted the *World List* abbreviations and is presently issuing a style book which will make a few of the more com-

* From the Laboratory of Physiology, Yale University School of Medicine, New Haven.

† International because the manner of forming abbreviations conforms to the general and special rules reached by an international committee and embodied in the *international code of abbreviations for titles of periodicals.* The abbreviations on the whole are brief, yet unmistakably lead to a specific publication. It is hoped that some day an ambitious person will deal with the abbreviations of medical and scientific journals which ceased publication before 1900, since this is the only limitation of the *World List.*

‡ Evidence of sectionalism lies in the fact that the Surgeon-General's catalogue, like the office of the American Medical Association, still uses "M.," instead of "Med." as abbreviation for "Medicine" and "medical."

mon abbreviations readily available. This style book will be supplied on request of the Editors, *Journal of Neurophysiology,* 333 Cedar Street, New Haven, Connecticut.

The scope of the *World List* and certain interesting details concerning language distribution of existing scientific periodicals is given in a letter on the second edition by Sir Charles S. Sherrington, published in *Nature,* October 20, 1934, vol. 134, p. 625 which ran as follows:

"The recently issued second edition of the 'World List of Scientific Periodicals' (see *Nature,* Sept. 22, 1934), provides a census of the current scientific periodicals throughout the world. The detailed thoroughness of the work, executed under the editorship of Mr. W. A. Smith, of the British Museum, with an expert staff, the advantage taken by them in regard to comprehensiveness of entry, from experience gained in the first edition now nine years ago, and the very magnitude of the list arrived at, extending to more than 36,000 individual titles, allow the supposition that in this conspectus we have the total current output of scientific periodicals of the world represented with something like exhaustive completeness.

"To-day periodicals constitute the main bulk of scientific literature. They furnish the main channel for publication of new scientific discoveries and inventions. They form a chief medium for the exchange and discussion of new views. They can be accepted therefore as constituting in large measure an index to scientific activity. For obtaining a view of the contributions to scientific activity furnished from different parts of the world, an interest attaches therefore to the quota, toward the general output of such periodicals, traceable severally to some of the main contributory groups throughout the world. To assess this the number of titles belonging to a given language as recorded by the 'World List' may be taken as some guide. The 'World List' itself covers eighteen different languages. Without carrying the inquiry further than the five languages English, French, German, Italian and Russian, the results come out, following them in reverse order to the above as follows:

Russian	1,833 scientific periodicals
Italian	1,667 scientific periodicals
German	6,186 scientific periodicals
French	5,013 scientific periodicals
English	13,494 scientific periodicals

"Relatively one to another, the numerical sizes of these groups may be accepted as carrying some indication as to how scientific activity bulks relatively under these several linguistic headings. Scientific production will obviously be a part of the scientific activity thus indexed. An inference also allowable, within limits, will be as to the relative size of that fraction of the world-public which is reached by science through the medium of each of the several languages. The results cited above make evident the special responsibility resting on those contributors to science whose language is English to spare no pains to write it worthily of the great role entrusted to it as a medium of scientific thought today."

Sherrington's review of the second edition appeared in *Nature,* September 22, 1934, vol. 134, pp. 435-437. Attention should also be directed to a more recent publication of the *Union catalogue of the periodical publications in university libraries of the British Isles with their respective holdings excluding titles in the World list of scientific periodicals, 1934,* compiled on behalf of the Joint Standing Committee on Library Coöperation by Marion G. Ruppel, London, National Central Library, 1934, xxii, 712 pages. This was reviewed in *Nature,* November 6, 1937, vol. 138, page 786.

The need for standard abbreviations in medical literature is real, and since we now have an adequate standard there is no possible excuse for its not being adopted by our medical libraries and journal offices.

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DEMONSTRATION OF MANUSCRIPTS AND PRINTED BOOKS OF THE LATE MIDDLE AGES AND THE EARLY RENAISSANCE*

By James F. Ballard
Director, Boston Medical Library

In connection with medical literature of the past it seems appropriate to show you typical examples of the manuscripts and books of the late Middle Ages and the early years of the Renaissance.

MANUSCRIPTS

The Boston Medical Library has gathered together during the past few years a small collection of about fifty manuscripts dating from 1200 to 1500 A.D., with the intention of assembling typical examples in the various classes representative of the period. There are manuscripts in Latin, Arabic, and Hebrew (the languages of the learned); in Italian, German, French and even English; of Eastern and Western origin; in different types of hands (by professional scribes and in the ordinary hands of the period). The scope of the collection is confined to medicine and the allied fields of philosophy and science. The manuscripts may be conveniently divided for demonstration into popular books, textbooks, reference books and composite volumes, or what might be termed "one-volume libraries." They will be considered by centuries.

THIRTEENTH CENTURY

Probably the most interesting item in the whole collection is the *De proprietatibus rerum* of Bartholomaeus Anglicus, a Franciscan monk. This manuscript was copied in northern Spain (Spanish Navarre) about 1280 and at one time was owned by the Abbey of Leyre. It is a vellum manuscript of 298 leaves in an original deerskin binding over wooden boards, with crude iron bosses. The book was written to explain allusions to natural objects in the scriptures and glosses and is, in fact, an account of the properties of things in general, an encyclopedia of similes for the benefit of the village preaching friars, men without deep, sometimes without any, learning. The original was written in the middle of the thirteenth century, about 1230-1240, and it immediately became immensely popular and was translated from Latin into French, Spanish, Dutch and English. The fifteenth century saw the printing of twelve

* Given at the symposium on Medical Literature at the Fortieth Annual Meeting of the Medical Library Association, Boston, June 29, 1938.

Latin, eight French, a Dutch, a Spanish and an English edition of *De proprietatibus rerum.*

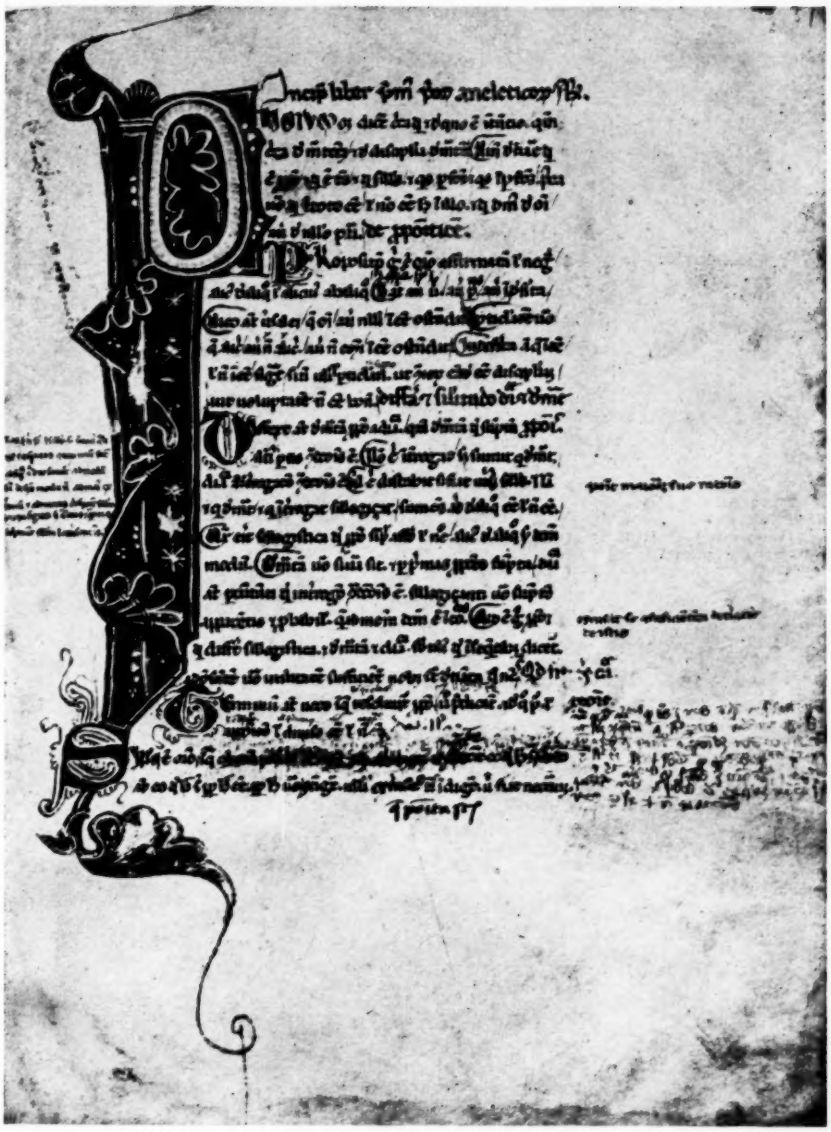
Three other thirteenth century manuscripts are shown, the textbooks of Constantinus Africanus and Isaac Judaeus, respectively, and a codex of Salerno. Constantinus Africanus's *Viaticum,* containing also Johannes de Sancto Paulo's *Tractatus de carnibus,* is a vellum manuscript of 120 leaves, in Latin, written in Italy about 1250. The *Viaticum* was one of the great textbooks of the Middle Ages. The Library copy, written in gothic characters and bound in a fifteenth century Nürnberg binding of stamped calf on wooden boards, with bosses and clasps intact, is from the Prince Dietrichstein collection, sold in 1933. It was once owned by Hieronymus Münzer.

Constantinus (c. 1020-1087), a Benedictine monk, was the first great translator of scientific works from Arabic into Latin. He put into Latin the writings of Isaac Judaeus, Haly Abbas and others, and also translated from Arabic the works of Hippocrates. Constantinus was not always careful to give credit to the authors he translated and often let the works go out under his own name. After many years of travel in the East, he settled in Monte Cassino, about 1056-1060, and remained there until he died in 1087. Monte Cassino, a hill overlooking the town of Casinum in Italy, is about forty miles northeast from Capua. During, or at the end of, his travels he sojourned at Salerno for some time and exerted a great influence on that school. He did his translating, however, at Monte Cassino. A collected edition of his works was published at Basel, in two volumes, 1536, 1539; and eight of his translations are included in the *Opera* of Isaac Judaeus, Lyon, 1515.

Isaac Judaeus's *Liber de febribus,* the version of Constantinus Africanus, is a vellum manuscript of 64 leaves, written in southern France, probably Montpellier, about 1250. Isaac, the Jewish physician to the Caliph, 'Ubaid Allāh al-Mahdī, in Turin, flourished in the tenth century, dying about 932.

The *Salernum Codex* is a vellum manuscript of 82 leaves, in Latin, written in Italy, probably at Salerno about 1200 to 1250. A medical miscellany, it contains treatises by Constantinus Africanus, Isaac Judaeus, Otho of Cremona, Giraldus of Montpellier, Copho, and also several sections of excerpts. It is a remarkable collection of the textbooks of the two most important universities of the Middle Ages, Salerno and Montpellier. The first part, consisting of 31 leaves, was written at the beginning of the thirteenth century and contains three treatises on uroscopy. The second part, written about the middle of the thirteenth century, consists of a rich collection of medical tracts and excerpts. The whole is an assemblage of manuscripts made by a German student, who presumably bought the first part and compiled the second at Salerno.

In the tenth, eleventh and twelfth centuries, Salerno, situated thirty



GROTESQUE ILLUMINATION IN THE MANUAL OF ARISTOTELIAN LOGIC. WRITTEN IN NAPLES IN THE EARLY FOURTEENTH CENTURY

(From the William Norton Bullard Collection, Boston Medical Library)

FIRST PAGE OF AVICENNA, CANON. ARABIC MANUSCRIPT, PERSIA, 1309

(From the Solomon M. Hyams Collection, Boston Medical Library)

miles southeast of Naples, was the center of medical studies and a popular resort of the sick and wounded. Its literature had a far-reaching influence. The date of the foundation of the medical school is unknown, but as early as the tenth century the physicians of Salerno had acquired a reputation and during the twelfth century the fame of the School persisted until it became overshadowed by the University of Naples, founded in the first quarter of the thirteenth century.

FOURTEENTH CENTURY

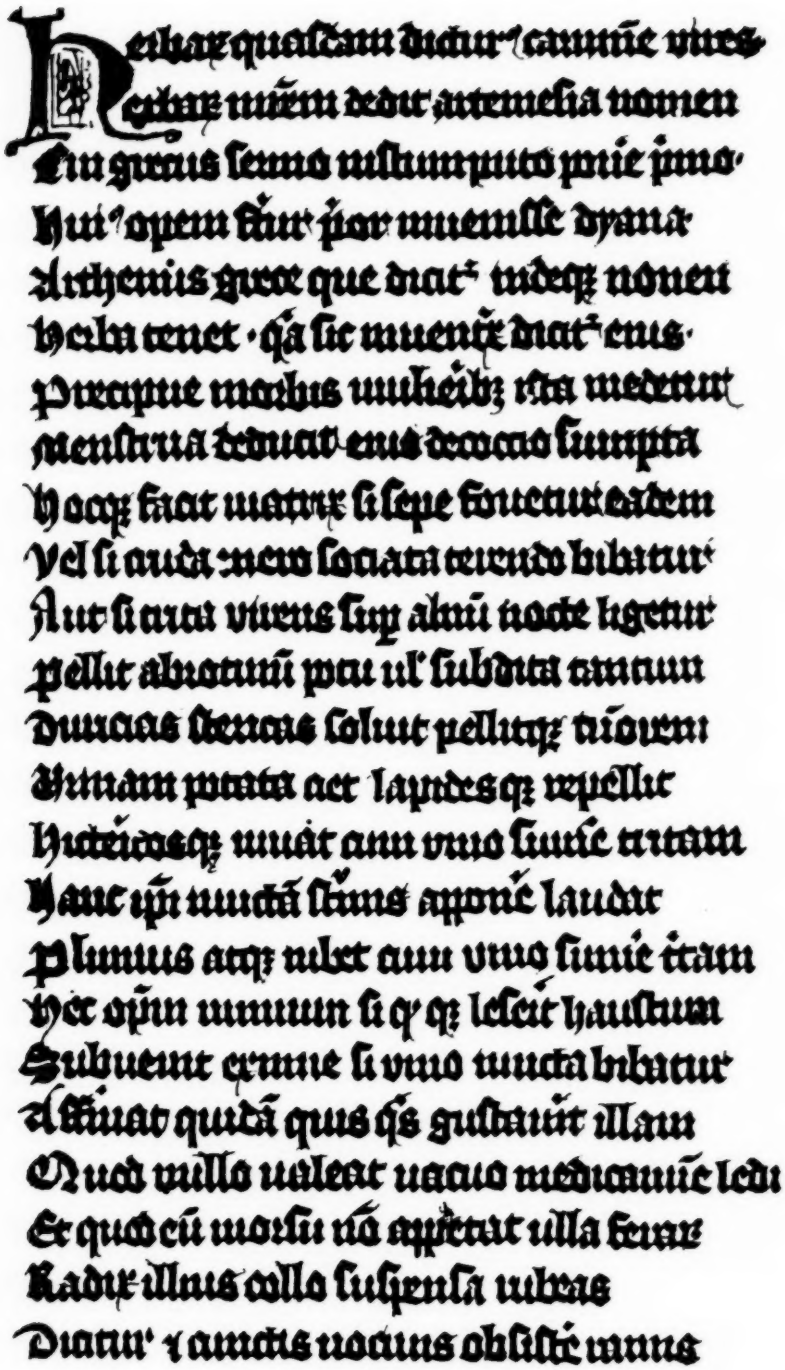
Aristoteles's *Logica (Organon),* a vellum manuscript of 111 leaves, in Latin, was written in Italy in the fourteenth century. It contains unusual grotesque ornamentation and there are numerous interlinear and marginal notes in several hands, contemporary with the manuscript and later; also many erasures and corrections of the text, mostly in a hand not much later than that of the manuscript. The usual course of Aristotelian logic is indicated by such texts as: Porphyry; Predicaments; Gilbertus Porretanus, Sex Principia; De Interpretatione; Analytica, Prior and Posterior.

Avicenna's *Al Qānūn fī-l-tibb (Canon),* a paper manuscript of 318 leaves, in Arabic, was written in Persia in 1309, by the scribe 'Alī ibn' Abdi 'llāh at-Tarkhanī. It is transcribed in minute Nashki characters, with headings and catch-words in red and large characters in red and gold. It is the entire *Canon* and the Library copy is complete and in good condition. The Library has other manuscripts of the *Canon,* in Hebrew, and a number of printed editions. Avicenna, physician, prince, poet, philosopher and statesman, flourished in Persia at the end of the tenth century and died about 1030. His *Canon* is an exemplification of Graeco-Arabic medicine, based largely on Galen, and held sway until long into the seventeenth century.

Composite volumes are of unusual interest as they were in many cases the libraries of their individual owners. Four examples of the fourteenth and fifteenth centuries are shown at this time.

Medical Miscellany, a paper manuscript of 34 leaves, 1375-1450, in Latin, contains treatises on "epidemics," "secrets," "ivory capsule," and "pronostics" by Hippocrates and on "urine" and on "the pulse" by Aegidus Corbolensis. A second *Medical Miscellany,* a paper manuscript of 107 leaves, was written in Italy, in Latin and Italian, late in the fourteenth century, and contains treatises on "surgery," "phlebotomy," "worms in children," "inflammation of the breast," the herbal of Pseudo Alexander Magnus and various philosophical subjects.

The *Macer floridus de viribus herbarum carmen* is a vellum manuscript of 44 leaves, written in Latin in the fourteenth or early fifteenth century, probably in Austria, in an elegant gothic type. The text was first printed in 1477 at Naples by Arnoldus de Bruxella and there are several



FIRST PAGE OF MACER FLORIDUS. VELLUM MANUSCRIPT OF THE LATE FOURTEENTH CENTURY

(From the William Norton Bullard Collection, Boston Medical Library)

editions printed in 1500, which are illustrated. Number one of the Klebs list is shown with the manuscript. The *Macer floridus,* an herbal, is a medical poem in hexameters, setting forth the medicinal virtues of seventy-seven different plants. The author is unknown, but is now generally considered to have been a Frenchman, Odo of Meudon. The text, originating in the late eleventh century, was a book of great popularity, diffused in all countries.

FIFTEENTH CENTURY

Petrus Hispanus's *Tesoro dei poveri,* a paper manuscript of 74 leaves, in Italian, was written in northern Italy about the middle of the fifteenth century. A fine thirteenth century copy is also contained in the miscellany of an English physician. Petrus lived from 1210 to 1277. His *Tesoro* is a representative handbook of medical practice, which became a leading brief medical manual of the Middle Ages. Its title, *The treasure of the poor,* indicates that it was written for poor student physicians, who could not afford many books. It was translated into Spanish, Portugese, and English in the manuscript period and printed five times before 1500.

Bernardus de Gordonio's *Lilium medicinae,* a paper and vellum manuscript of 241 leaves, in Hebrew (Shoshan ha-Refuah), שושן הרפה was written in Spain in 1466 and was first printed in 1480 in Latin, at Naples, by Franciscus de Tuppo.

A few other manuscripts of particular interest are mentioned briefly. The *De re uxoria* of Franciscus Barbarus is a vellum manuscript of 120 leaves, in Latin, written in the fifteenth century. The text was first printed in 1513 and went through a number of editions and translations into Italian and French. The French edition was called *The state and government of marriage,* and its contents are interesting enough to quote from at this time. Book 1: "On marriage and its advantages"; "What dowry and what virtues should be looked for in a wife"; "At what age a woman should marry"; "On the social position of the woman"; "On the customs of marriage"; and Book 2: "Duty of the wife in general"; "On silence and talkativeness"; "On dress"; "On food"; "On care of the household"; "On education of children."

Albrecht von Eyb, a doctor of laws, who lived about 1420 to 1475, has been credited with writing the first book on eugenics, *Ob einem Manne sei zu nehmen ein ehelich Weib oder nicht,* written in 1459-1460 and first printed at Nürnberg in 1472. Franciscus de Barbarus, a Venetian nobleman, died in 1454, before Eyb wrote his work on whether a man should "take to himself a married woman or not." The text of Barbarus was available in manuscript and was undoubtedly known to Eyb. A comparison and analysis of the texts of the two works should determine if the credit is to be transferred to Barbarus.

FIRST PAGE OF BERNARDUS DE GORDONIO, SHOSHAN HA-REFUAH [LILIUM MEDICINAE]. SPANISH-RABBANICAL HEBREW MANUSCRIPT, 1468.

(From the Solomon M. Hyams Collection, Boston Medical Library)

De proprietatibus jejunii, by Antonius Gazius, a paper manuscript of 148 leaves, written in Italy in 1496, in Latin, is an apparently unknown work by the well known Paduan physician who wrote the *Corona florida medicinae,* first published in Venice in 1491. Gazius lived in the late fifteenth century, dying in 1530. No printed edition of the present treatise is known. This manuscript, dated December 8, 1496, may be the first transcription from the author's copy.

The next manuscript is rather extraordinary, as it is the medical codex of an English physician of about 1400. It is a miscellany on 153 leaves of vellum, folio, in Latin, French and English, and consists of several parts written by various hands over a lengthy period, say between 1250 and 1450, and bound together in the early fifteenth century in strong wooden boards with pigskin back. The contents consist of several entire medical and pharmacological treatises and fragments, notes, and innumerable recipes. Among the most interesting items we note: Folio 36, verso: *Oratio medici in exhibitione medicine,* early fourteenth century, is a remarkable prayer, which the physician is to pronounce when administering a remedy, asking God's blessing and help for the efficacy of the medicine to produce the desired cure. Folios 37-52 contain an entire *Practica, a capite usque ad pedes,* anonymous, early fourteenth century, and begins: "De capillis et primo de tynea capillorum." Folio 52, verso, is a Christian magical cure using the Holy Eucharist, entitled: *Ad practicam hostiae.* The physician is to take four consecrated wafers and to mark them with one, two, three and no points, speaking certain incantations over them, which are given in full, with indication of the "signs of the cross" he is to make while reciting them. Then the patient is to confess and is to be given these four wafers on four successive days, and is to recite certain prayers, exactly indicated, including the Credo, the Angelic Salutation and a prayer to St. Sigismund; these prayers are not the same for the four days. This is a most unusual and interesting item, probably written in 1350. Folios 139, verso—143, verso, contain an alphabetical glossary or list of herbs with their description and their names in French and English (fifteenth century). In folios 143-153 are various recipes, many in English, fifteenth century, with certain astrological indications. Here we find the name of an early fifteenth century owner, Robert Wylie.

This composite manuscript is a very typical specimen of a handbook as collected and referred to by a mediaeval medical practitioner, preserving scraps of old recipes coming his way with treatises and textbooks which he may have owned since his student days.

Another *Medical Miscellany,* a paper manuscript of 35 leaves, about 1470, written in Austria, in Latin, contains the *Regimen sanitatis,* with other tracts. This is a typical little miscellany of medicine, hygiene,

chronology and cosmography for everyday use, as were often compiled in the Middle Ages.

PRINTED BOOKS

When printing by movable cast types was invented, there was naturally great opposition from the manuscript trade, which had reached its commercial height at that time. The printers of the new books were very careful to select for their first ventures texts which would appeal to scholars or the people. The scriptures, Greek and Roman classics, schoolbooks, broadside calendars and books of special interest to the people made up the output of the new presses.

We now separate manuscripts and early printed books into three classes, based on the development of printing: manuscripts to about 1500; books to 1480; books from 1481 to about 1520. The early types used in printing were patterned on the letters in manuscripts written by scribes and were gothic in appearance. In the two books first shown, however, we find a new type, much more legible than the common gothic. It was not until 1471 that the first medical books were published. We find three books bearing that date, all having to do with the practical side of medicine, the compounding and use of drugs in treatment.

Albucasis's *Liber servitoris,* translated by Abraham Judaeus from Arabic to Latin, and Nicolaus Salernitanus's *Antidotarium* were both printed by Nicolaus Jenson of Venice in 1471, in beautiful Roman type. These two works are contained in a volume of great association interest, as it was the property of the great humanist physician, Hieronymus Münzer, and is from the Prince Dietrichstein collection. Bound together in a contemporary binding with six pages of notes by Münzer, they have also many notations in his hand. It is a fortunate circumstance that we are able to show you two of the first three dated medical books.

The third dated book of 1471 is the *Opera* of Joannes Mesue, Junior, without place or printer. This work also has to do with simples and their use as remedies. An early vernacular edition, in Italian, is also shown: the *Libro della consolatione delle medicine,* printed by Johann Vurster, in Modena, June 25, 1475.

The year 1472 saw the publication of at least four dated medical works: April 21st, Paulus Bagellardus's *De infantium aegritudinibus ac remediis,* published by Bartholomaeus de Valdezoccho and Martinus de Septem Arboribus at Padua; April 22nd, *Regimen sanitatis deutsch* (Von der Ordnung der Gesundheit), printed by Johann Bämler at Augsburg; December 23rd, Avicenna's *Canonis liber III,* also printed at Padua by Bartholomaeus de Valdezoccho and Martinus de Septem Arboribus; and Petrus de Abano's *Consiliator,* printed by Thomas de Hermannstadt and Johann Vurster.

The *Regimen sanitatis deutsch* is important and interesting biblio-

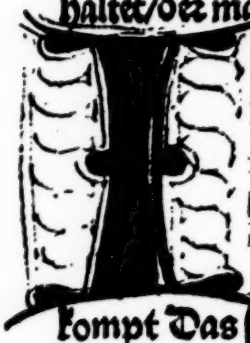
INCIPIT ANTIDOTARIVM NICOLAI.

EGO Nicolaus rogatus aquibuſ-dam ī pratica medicine ſtudere uolētibus: ut eos recto ordīe mo-dum conficiendi diſpenſandiq; docerem :& certam eis traderem doctrinā: ī qua de ſingulis uſua-lium medicinarū: unā tantum uel duas aut plures libras conficere ſcirent : & quantum de unoquoq; genere gūmarum herbarū ſeminum & ſpecierum inter omnes medicinas ſubſcriptas acciperent : eis in ſcriptis redigerē : necnon quibus egritudinibus proprie ipſe medicine ꝓbate fuerint. Illorū tandē precibus adductus : talem eis tradidi doctrinā . Et primo de ſpeciebus. Tria igitur requirūtur in ipſa diſpenſatione. Primū ut omnia equaliter pōderēt̄ tam ī ſpeciebus q̄ in gūmis & herbis ſecundum ꝓ-prium pondus uniuſcuiuſq; . Secūdo ut non ſint nimia uetuſtate cōſūpta. Tertiū ut radices : herbe: & ſemina congruis temporibus ſint collecta . & in congruis locis repoſita . ita ut a fumo precipue & a nimia humectatiōe & humido loco corrūpi non poſſīt. In cōficiendo autē tria conſiderāt̄ ſimiliter mellis puritas/& omne quod ſufficiat.& eq̄lis pul-ueris cribellatio .& ſyrupi ad aque coſūptionē fiat decoctio. In puritate mellis duo actendunt̄. ī. ne ſit

FIRST PAGE OF NICOLAUS SALERNITANUS, ANTIDOTARIUM; AND ALBUCASIS, LIBER SERVITORIS, VENICE, JENSON, 1471. HIERONYMUS MÜNZER COPY

(From the William Norton Bullard Collection, Boston Medical Library)

Hie nach volgt ein nützlich regimēt/wer ſich darnach haltet/der mag ſein leben lang in geſuntheit behalten



Ob der heylig weiſſag beſchreybt vnd ſpricht Herr du haſt geſetzt ein ēnd dem leben der mēſchen/das nyemāt über gen mag Vnd zů dem ſelben ennd/das got alſo ainē yegelichen geſetzt hat/ kōmen vil mēſchen nicht/ vōn ſterbē ee dz ir ēnd kompt Das ſind vierlayhand menſchen. Die erſten ſind die gerechten ſäligen menſchen/ dye got nymbt auß diſem leben vor irem ennd Als d weys Salomō ſpricht in dē bůch der weißheyt Raptus eſt iuſtus ꝛc Das iſt geſprochen Der gerecht wurt gezuckt auß diſem leben vor ſeinem ennd/ dz er von der poßheyt der ſünd zů dem böſen nit verkert werd Vnd das zucken auß diſem leben geſchicht vō beſundern genadē vñ für ſichtkeyt gottes. Die andern mēſchen die zů irem rechten ennd nit kōmen ſind die fräuelñ ſünder/den von ir ſünde wegen ir leben vō got wurt abgeprochē Vñ von den ſchreibt der heylig dauid in dem pſalter vnd ſpricht Viri ſanguinū et dolo ſi ꝛc Das iſt geſprochen/die mēſchen des plůts das iſt der ſündē vnd der boßheyt pringen ir täg nicht zů halbem ennd/vōn das iſt die vrſach/ dz vil menſchen iung ſterben. Darumb wiltu lang lebē/ſo leb in gottes forcht/wān wer gotforchtig iſt Als der weys Salomon ſpricht. Timor dñi eſt fons ꝛc Das iſt geſprochen. Gottes forcht iſt ain lebendiger prun Gottes forcht gibt langes leben.

FIRST PAGE OF REGIMEN SANITATIS DEUTSCHE, AUGSBURG, BÄMLER, 1472

(From the William Norton Bullard Collection, Boston Medical Library)

graphically as well as medically. It is a book for the common people and is the first medical work printed in the vernacular. The author is unknown but is contemporary with the time of printing. It is one of a series of tracts printed by Bämler of Augsburg during 1472 and later assembled into a composite volume, of which only two complete sets are known, one at Wolfenbüttel and the second in the Boston Medical Library. Bämler printed a table of contents, in which he listed the series of tracts, of which only one copy has survived, that at Wolfenbüttel. The volume is usually referred to as the *Lehre und Unterweisung,* the title of the first tract in the volume. The question relating to the printing of the volume forms a major problem in bibliography, which was studied by Sudhoff in 1908, but at that time he had only one complete collection available for study, the one at Wolfenbüttel. Since then, the Boston Medical Library has obtained the collection of six tracts, which are bound together in a fine contemporary binding. The copy in the British Museum contains only numbers one through three and the only one of the tracts listed in the old American *Census* is the *Regimen* which is in the Army Medical Library.

The years following 1472 saw the printing of an increasing number of important medical books and tracts. On this occasion are shown two early vernacular and two important first editions in Latin: under the date of August 28, 1474, Bartholomaeus Metlinger's *Regimen der jungen Kinder,* printed by Johann Bämler at Augsburg; March 17, 1477, Ortolff von Bayrlandt's *Arzneibuch,* published by Anton Koberger at Nürnberg. The first printing of a classical text was Aulus Cornelius Celsus's *De medicina,* published in 1478 by Nicolaus Laurentii at Florence. In 1480 appeared Moses Maimonides's *De regimine sanitatis,* a monastic copy, *apud* S. Jacobum de Ripoli, Florence.

A LIST OF HEALTH WORKS FOR LAY READERS

COMPILED BY A COMMITTEE OF THE MEDICAL LIBRARY ASSOCIATION

SUPPLEMENT

Sex Education

Being Born, by Frances Bruce Strain. N. Y. Appleton-Century. 1936. 144 pp. illus. pl. $1.50.

This is the story of human beginnings written to meet the needs of pre-adolescent children and those of Junior High School years. Though simple in form, it carries enough detail to give a substantial background on which to build. A book for the child himself.

Growing Up, by Karl DeSchweinitz. 2nd ed. N. Y. Macmillan. 1935. 95 pp. illus. $1.75.

A book for the young child's own reading, in which he will find elementary biological facts simply told.

Introduction to Sex Education, by Winifred Vanderbilt Richmond. N. Y. Farrar and Rinehart. 1934. 326 pp. illus. $2.50.

Not a book on method of instruction, but a study that offers much needed basic material for parents and teachers in the field of sex.

New Patterns in Sex Teaching, The Normal Sex Interests of Children and Their Guidance from Infancy to Adolescence, by Frances Bruce Strain. N. Y. Appleton-Century. 1934. 242 pp. $2.

A parent's handbook which offers answers to a hundred questions of children. It also discusses how to meet problems arising from interest in sex play.

The Sex Factor in Marriage. A Book for Those Who Are or Are About to Be Married, by Helena Wright. New and enlarged ed. N. Y. Vanguard Press. 1937. $2.

This book contains detailed information about the ways in which the physical intimacies of married life may be successfully and happily managed, written in plain but scientific language.

Your Body and Its Care

Atlas of Human Anatomy: With Explanatory Text, by Jesse Feiring Williams. N. Y. Barnes and Noble. c1935. 64 pp. illus. col. pl. $2.

The beautiful illustrations and colored plates by Franz Frohse, Max Broedel and Leon Schlossberg serve as visual aids to an understanding of the text, which is clearly and simply written.

The Business Man and his Health, by Jesse Feiring Williams. N. Y. McGraw-Hill. 1932. 175 pp. $2.

The business man of today faces the unique health problems arising in the modern business world plus the common handicaps to health that confront all men. The author presents these hazards against their sociological background in a straightforward style that seldom fails to appeal to the modern business man. Special emphasis is placed on exercise; mental hygiene in business; hobbies; vacations; and the periodical health examination.

Healthful Living, by Harold S. Diehl. N. Y. McGraw-Hill. 1935. 354 pp. $2.50.

The author has been identified for years with the American Student Health Association and has done outstanding work in promoting the health of students in universities. Under the heading of major health problems some consideration is given to separate diseases, such as cancer, tuberculosis, heart disease and pneumonia, but it is early diagnosis and prevention that are stressed, and the emphasis of the whole book is on healthful living.

The Tides of Life: The Endocrine Glands in Bodily Adjustment, by R. G. Hoskins. N. Y. Norton. 1933. 352 pp. $3.50.

The author discusses first the hormones as chemical regulators of the body; the various glands in order, their functions and dysfunctions, their relationship to each other, and their biology.

What Everyone Should Know About Eyes, by Park Lewis. N. Y. Funk. 1937. 82 pp. 35 cents. (National Health Series.)

Explains the complicated mechanism of sight; gives sound advice on glasses and their use; discusses disorders of the eye, and their prevention, and the part heredity plays in the inheritance of eye defects. An altogether reliable and readable book on a subject on which far too much unscientific material has been written.

Your Hearing: How to Preserve and Aid It, by Wendall Christopher Phillips and Hugh G. Rowell. N. Y. Appleton. 1932. 232 pp. illus. $2.

Your Teeth and Their Care, by Carl W. Adams. St. Louis. Mosby. 1932. 141 pp. illus. pl. $1.25.

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MISCELLANEOUS NOTES

THE MANUSCRIPTS, incunabula and early printed books in the Solomon M. Hymans Collection of Medical and Scientific Hebraica and Judaica, in the Boston Medical Library, were described by Dr. William C. Quinby in the Festschrift to Dr. Edwin Beer of New York, which formed the March-April 1938 number of the *Journal of the Mount Sinai Hospital,* New York.

Dr. Ingo Hackh of San Francisco was working on a union list of dental periodicals and as a beginning had compiled a list of Dental Libraries, which was published in *Contact Point,* October, 1938.

The annual report of the Library of the London School of Hygiene and Tropical Medicine again comments on the material it receives through the Exchange of the Medical Library Association. Its Reece collection on inoculation and vaccination, received in 1930, now numbers 174 volumes and many pamphlets.

The Mary Imogene Bassett Hospital, Cooperstown, N.Y., has issued a 38 page, "Bibliography on Rural Medicine," compiled by Dr. David M. Kydd.

The Northwestern University Medical School, Chicago, has issued a broadside, "Oath of Hippocrates," reprinted from the "Genuine Works of Hippocrates," translated from the Greek by Francis Adams, Volume 2, London, 1849.

On November 1, President Roosevelt signed an order reducing the postage rates on books without paid advertising from the parcel post rates to a flat rate

of a cent and a half a pound for the United States. A book or books may be sent from Boston to San Francisco at the same rate as from Boston to New York. The rate has been established for eight months, until July 1, 1939, for a trial period with the object of encouraging a wide distribution of books throughout the country.

Dr. Sanford V. Larkey has written an interesting introduction to the Surphlet translation of Laurentius, "A Discourse of the Preservation of the Sight; of Melancholike Diseases; of Rheumo, and of Old Age," recently published by the Oxford University Press.

Miss Marjorie Frew, the Librarian of the Witwatersrand Medical Library, Johannesburg, South Africa, has written a fine paper on "Medical Library Craftsmanship" in the *Leech,* Vol. 8, No. 2, September 1937. Her Library has for its clientele the students and faculty and staff of the Hospital of the Medical School of the University of Witwatersrand as well as all medical men in Johannesburg and throughout South Africa. Miss Frew divides readers into three classes, apprentices, journeymen and masters, and has discussed the needs of each class from a bibliographical and literary research point of view. This paper should be read by every medical librarian. It is a fine piece of work.

The October 1938 number of the *Bulletin of the School of Medicine, University of Maryland* is a Library Number, commemorating the 125th anniversary (1813-1938) of the Library. Dr. G. Carroll Lockard, Chairman of the Library Committee, has an editorial on the Library, and Mrs. Ruth Lee Briscoe, the Librarian, writes on its history; and Dr. J. E. Savage on its historical collections.

A new census of the incunabula contained in the Library of the College of Physicians of Philadelphia has been published in the September 1938 number of the *Transactions and Studies* of the College. An interesting Foreword is unsigned but internal evidence points to our fellow member, W. B. McDaniel, 2d, as the author. The total number of editions in the collection is 409, and is surpassed only by the Army Medical Library and the Boston Medical Library. Reference is given to the Klebs, *Incunabula medica et scientifica,* Bruges, 1938, which makes it possible to compare the collection with others of a scientific and medical character. Of the 409 editions listed, 323 are in the Klebs' list. The compiler is to be congratulated on a fine piece of work.

I. T. A.

BOOK NOTES

INDEX-CATALOGUE OF THE LIBRARY OF THE SURGEON GENERAL'S OFFICE, U. S. ARMY (ARMY MEDICAL LIBRARY). Fourth Series, Vol. 3, Washington, 1938.

This volume contains as a supplement, preceding the regular text, an extraordinary list of *Congresses* of value to medical libraries. 261 pages are given up to the listing of the publications of congresses and like assemblages on 1739 subjects, arranged alphabetically from Abortion to Zoology. A comprehensive subject, word and title index completes the list. Col. Jones, the librarian, is to be congratulated upon the compilation and publication of this valuable reference work.

BIOGRAPHY OF THE UNBORN. Margaret Shea Gilbert. 132 p. 8°. Baltimore: Williams and Wilkins, 1938. $1.75.

This book, written for the lay reader is so well and accurately done that all students of biology will find an adequate presentation of an admittedly difficult subject. The style is smooth, and flavored with a touch of humor, reminiscent of Oliver Wendell Holmes. The book deserves a wide circulation and should be read by every medical and reference librarian. It received the award of $1000, in 1937, offered by the Williams and Wilkins Company for the best manuscript on a science subject for general reading.

INDEX MÉDICO-PHARMACEUTIQUE. N. T. Deleanu, René Febre, L. Coniver. 756 p. 8°. Paris: Masson et Cie, 1937. 150 frs.

A book for the reference librarian, having a valuable list of 488 pages of therapeutic agents, arranged alphabetically, and giving the chemical formulae, synonyms, physical and chemical properties and therapeutic data.

DAS AMERIKANISCHE BUCHWESEN. Von Hellmut Lehmann-Haupt, unter Mitarbeit von Ruth S. Granniss und Lawrence C. Wroth. 386 p. 8°. Leipzig: Karl W. Hiersemann, 1937. For U.S.A. Reichsmark 12.

The German house of Karl Hiersemann is to be complimented on publishing this comprehensive work on the history of book production and book col-

lecting in the United States. The work is the joint effort of three persons, two of whom are generally known to the American library and book world. Mr. Lawrence C. Wroth, librarian of the John Carter Brown Library in Providence, an international authority on Americana, writes on American book production from the time of the establishment of the Stephen Daye Press in Cambridge, Mass., in 1639 to 1860. This essay comprises one hundred pages. The chronological table of presses is of particular value. The story of the American book trade from 1860 to the present is told by Mr. Hellmut Lehmann-Haupt, curator of the Rare Book Department, Columbia University. American collectors and private and public libraries are ably dealt with by Miss Ruth S. Granniss, librarian of the Grolier Club, New York, N.Y., who is probably more competent to write on American collectors than any other living person. Her essay of eighty-eight pages is a mine of information for all interested in book collecting. A bibliography of twenty-two pages and a comprehensive index are appended to the text. The book is highly recommended and it is suggested that an edition in English should be published at an early date.

TRIUMPH OVER PAIN. René Fülöp-Miller. 438 p. 8°. Indianapolis: Bobbs-Merrill Co., 1938. $3.50.

Mr. Fülöp-Miller, eminent Hungarian scholar and writer, author of a number of works, which have been translated into nineteen languages, in his "story of anesthesia," covers rather fully the period from the discovery of nitrous oxide by Joseph Priestley in 1772 to the use of chloroform by James Y. Simpson in 1847. The author has devoted considerable space to the history of the uses of laughing gas (nitrous oxide), mesmerism, and morphine, which preceded ether, but in his enthusiasm for the dramatic story of the discovery of ether as an anesthetic, he has treated scantily later developments, as well as the early history of attempts to dull pain. The work is essentially a narrative biography of William T. G. Morton, especially of the period of his life during which he was interested in developing the use of ether in surgical operations. The author bases his narrative and opinions on authenticated documents and gives credit to Crawford W. Long for performing the first operation under ether; to Horace Wells for the experiments with "laughing gas" and to Charles T. Jackson, for his recommendation of ether to Morton. To Morton he gives the credit for publicly demonstrating the use of ether in surgery and making possible its universal adoption.

The book is well printed on good paper, with a valuable sixteen page bibliography on the history of anesthesia and a five page chronology from the time of the discovery of "sweet vitriol" (ether) by Raymond Lull in the thirteenth century to the discovery of ethylene in 1923. The style is not adapted to reference purposes but, nevertheless, the book is recommended for all medical libraries and historical collections.

THE HISTORY OF BACTERIOLOGY. By William Bulloch. 422 p. 8°. London: Oxford Univ. Press. $3.75.

This history begins with the earliest theories of contagion and deals in order with "contagium animatum," fermentation, spontaneous generation,

putrefaction and ptomaines, pyemia and septicemia, bacteriology proper and immunity. A bibliography of sixty-four pages, arranged by subjects and a valuable section of fifty-eight pages of *Biographical notices of some of the early workers in bacteriology* are appended to the text. The book is well printed, well illustrated and is highly recommended for all libraries. It is a "must" book for the reference collection.

MENINGIOMAS. THEIR CLASSIFICATION, REGIONAL BEHAVIOUR, LIFE HISTORY, AND SURGICAL END RESULTS. By Harvey Cushing, M.D. 785 p. Springfield, Illinois, Charles C. Thomas, 1938. $15.

Although ordinarily textbooks are not reviewed in the *Bulletin,* this volume from the hand of a master surgeon and historian is worthy of notice. It contains matter of interest to medical librarians: a bibliography of a single type of brain tumor; case histories with the actual names of patients, some of them famous persons, such as Leonard Wood (pp. 408-414); "The Cases of Timothy Donovan and Dorothy Russell," names which will make their way into the history of medicine; historical notes, with illustrations, of particular importance; many illustrations from historical sources; an historical text which will become one of the classics of medicine. The beautiful typography is worthy of attention. Two copies, one for general use and one for the reference shelf, should be in every medical library .

THE BEGINNINGS OF SYSTEMATIC BIBLIOGRAPHY. By Theodore Besterman. Second edition; revised. 81 p. 4°. London, Oxford Univ. Press, 1936. 21 sh.

The author uses the term systematic bibliography in the sense of the enumeration and classification of books. The work is divided into four periods; the manuscript age (second-fourteenth centuries), the fifteenth century, the sixteenth century, and the seventeenth century.

Physicians stand out in the history of early bibliography. As early as the second century, Galen compiled a classified bibliography of his writings, "De libris propriis liber" and found it necessary to do a second one under the title "De ordine librorum suorum liber"; both of which were printed for the first time in the Aldine collective edition of Galen's works, Venice, 1525. Galen bibliographies were compiled by Hanain ibn Ishāq (809-873); and by Gentilis de Fulgineo. This last was printed in the 1483 Articella under the title "De divisione et ordine et numero librorum quo edidit Galenus"; the first printed medical bibliography.

Besterman has missed the auto-bibliography of Marsilius Ficinus, the Italian physician of the fifteenth century, printed in his "De sole et lumine," Florence, 1493. The first subject medical bibliography is the "De medicine claris scriptoribus" of Symphorien Champier, Lyon, 1506. Jerome Cardan did his own bibliography and it will be found at the end of his "De Sapientia," 1544, under the title "De libris propriis."

Besterman devotes a chapter to Johann Tritheim, the father of bibliography, whose works on the writings of the ecclesiastical fathers and on the writings of eminent Germans were both published in the late fifteenth century.

The sixteenth century is overshadowed by Conrad Gesner, universal bibliographer; and the seventeenth century is topped by Cornelius à Beughem, poly-bibliographer, who are extensively treated by Besterman. He also has five chapters on national and subject bibliography to the end of the seventeenth century and the last chapter of his book is a list of bibliographies printed to the end of the sixteenth century.

The book is well printed and illustrated and is highly recommended to all librarians and bibliographers.

RECENT BIOGRAPHY

J. B. MURPHY. STORMY PETREL OF SURGERY. By Loyal Davis. 311 pp. 8°. New York: G. P. Putnam's Sons, 1938. $3.

THE LIFE OF CHEVALIER JACKSON. AN AUTOBIOGRAPHY. 229 pp. 32 p. photographs. 9 plates. 8°. New York: Macmillan Co., 1938.

The subjects of these two biographies had one thing in common—they both were born poor; Murphy in a frontier log cabin, Jackson in the steel district of Pittsburgh. Both worked their way through school and college and attained eminence in their respective medical fields. Dr. Murphy was a dominant personality and as good a business man as a surgeon. He made many enemies who accused him of sharp practices but he surmounted all obstacles and attained a great reputation in surgery and finally became president of the American Medical Association. Dr. Davis has been impartial in his treatment of his subject and has succeeded in giving a fine picture of a distinctive personality.

Dr. Jackson tells the story of his own life, through the cruel early days until he reached his present pre-eminence in his field of surgery. He began to work with his hands when he was four years old and from wood work went to painting. He could have made as much of a success as an artist as he has made in bronchoscopy. He first began his work in esophagoscopy about 1890 and, after perfecting the esophagoscope, he took up the bronchoscope; by 1900 he had become a recognized international authority on diseases of the larynx.

THE HEALING KNIFE. By George Sava. 310 pp. 8°. New York: Harcourt Brace and Company, 1938. $2.50.

This autobiography, written under a pseudonym, is the story of a surgeon who worked as he studied to attain his medical education. Written in narrative form, it begins in Russia, during the World War and takes one to Constantinople, Sofia, Paris, Florence, where "Sava" obtained his degree with high honors and was awarded a medical scholarship, and finally to England where he now is located. This is an interesting book, reminding one somewhat of Versaeff's "Confessions of a Physician."

RECENT CATALOGS

ARGOSY BOOK STORES, 114 East 59th Street, New York City

The Renowned Medical Library of Allen Salter and Further Offerings from the Medical Library of Allen Salter, M.D. Catalogs 119 and 130. 1644 items. Prices are quite high when compared with American and European quotations. Contains a great number of good American books and pamphlets.

BRICK ROW BOOK SHOP, Inc., 55 Fifth Avenue, New York, N.Y.

A catalogue of the Renaissance. Part One. Italy. Compiled by E. Byrne Hackett. 171 p. 8°. N.Y. 1938. Listing 1207 items. A beautiful and useful catalog.

A third Bibliographical List. Paleography, Typography, Bibliography. 1298 items.

FRANK R. BROWN, Histon, Cambridge, England

Catalogue of Books and Manuscripts xivth to xviith Centuries. List 13. 1228 items, many of medical interest.

WM. DAWSON & SONS, LTD., Cannon House, Pilgrim Street, London, E. C. 4, England

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Classics of the Biological and Medical Sciences. Catalog 29. 312 items, many of outstanding importance. The prices on the whole are reasonable for the first class items, except that the "Scriptores chirurgia" is priced low and the Bartisch "Augendienst" is high, based on a wrong census of existing copies.

*E. P. GOLDSCHMIDT & CO., LTD., 45 Old Bond Street, London, W. 1, England

English Science and Medicine. List 29. 231 items, many of outstanding importance, and moderately priced.

Medieval Literature, Education and Universities. List 30. 314 items. Catalogs issued by this firm are useful as reference tools because of the copious historical notes from the pens of Drs. Weil and Goldschmidt.

OTTO HARRASOWITZ, 14 Querstrasse, Leipzig, Germany

Zeitschriften mit Jahrespreisen für das Ausland. This subscription guide to German periodicals should prove useful to all librarians.

KARL W. HIERSEMANN, 29 Königstrasse, Leipzig, Germany
Galilei, Kepler, Tycho Brahe und ihr Kreis. Catalog 652. 111 items.

*HOOSIER BOOKSHOP, 2135 North Alabama Street, Indianapolis, Indiana
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BERNH. LIEBISCH, Kurprinzstr. 6, Leipzig, C. 1, Germany
Medizin. Theil 1. Catalog 319. 2007 items of which over 400 are on the History of Medicine.

*ALFRED LORENTZ, Kurprinzstr. 10, Leipzig, C. 1, Germany
Innere Medizin. Catalog 420. Listing the libraries of Drs. Ludolf von Krehl and Paul Morawitz.

*MARTINUS NIJHOFF, 9 Lange Voorhout, The Hague, Holland
Standard Catalogue 1938-1939. Has good sections of Reference works, Sciences and Medicine, listing many sets of periodicals.
Bibliographie. Catalog 599. 654 items of standard material.

OLD HICKORY BOOKSHOP, 65 Fifth Avenue, New York, N.Y.
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Old and Rare Medical Books. List 39. 76 items.

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*SCHUMAN'S, 58 West Adams Street, Detroit, Michigan
Rare Medical Books. Catalog 4, Autumn, 1938. Interesting preface by J. Christian Bay, Librarian of the John Crerar Library. 438 items listed.

EUGENE L. SCHWAB, 220 West 17th Street, New York, N.Y.
Medicine, chiefly Early American. Catalog 601. Seven pages of periodicals, serials, books and pamphlets. Prices fair. A number of Edinburgh dissertations at English prices.

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A catalogue of early Books on Medicine and Surgery. No. 294. 299 items.

RAPHAEL KING, 28 Museum Street, London, W. C. 1, England
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